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THE HEADQUARTERS OF THE MINING INDUSTRY.

Visitors find here files of a great number of papers from the mining districts of this and other countries, and books of reference which can be consulted for information on any question in which they may be interested. They can have their letters addressed in care of "The Engineering and Mining Journal," P. O. Box 1833, New York, and will find in the headquarters every convenience for correspondence.

The introduction of improved methods in the Russian gold fields seems likely to proceed rapidly since German as well as French investors are taking an interest in the work. One of the first steps probable is the introduction of the Siemens-Halske electric process, which has been for some time on trial in the Transvaal. An arrangement has been made by the firm of Siemens & Halske and the Deutsche Bank of Berlin, by which an "exploration fund" of $125,000 has been set aside. The first use of this fund has been in sending two mining engineers, Messrs. Stierlin (late of the Rand Central mine in South Africa) and Schuleman, a Russian expert, to examine properties in the Oural Region in Siberia, with a view to the introduction there of the Siemens-Halske process, as well as to the purchase of mines.

It is the intention to push the process in Australia and America, as well as in Russia and South Africa.

A large amount of money has found investment, doubtless of a profitable character, in the improvement of water-powers for electrical transmission to mines and for mining work. There is another field for electrical transmission work which seems to be but little developed, but which, nevertheless, with proper management would prove profitable. The distribution of power for varied purposes from one central station has long been a recognized branch of the electrical business, and there is to-day hardly a station in a city or town of any size in the country, even though established for lighting only, that does not run its power circuit The success of this service depends partly on the obvious advantages of the electric motor in its convenience, reliability and other good qualities, but the underlying principle, were it not for which it is doubtful if the business would make much progress, is the economy of power generation in large units.

The consumer of 10, 15, 50 H. P., or more, finds it is cheaper for him to pay the electric company for current, on which the electric company naturally makes its profit, than it is to produce the power himself. The situation of mining properties in many districts naturally suggests that the same principle holds, in centralizing power generation for mining work. Even with direct currents, enough work has been done in long distance transmission to show that the field need not be particularly restricted in extent, where this plan could be sucessfully carried out, and the introduction of high tension alternating currents makes distance a comparatively insignificant factor. If the co-operative plan for making an installation of this sort seems inadvisable, the objections to it may be entirely removed by forming for the purpose, a separate company in which the interested operators would naturally be the principal stockholders. The installation, to be successful, would call for most careful engineering ability, as the diversity of the problems and the progressiveness of the work, so to speak, makes the laying of the plant, selection of site, arrangement of units, etc., of the greatest importance for its economical operation and reliability. We see no reason why such enterprises established under favoring circumstances, should not prove successful investments, while they would also bring the advantages of electric power applications to many who otherwise might not be able to afford the initial expense.

WHAT IS THE VALUE OF THE MERCED GOLD MINE?

There is unquestionably a growing interest in mining investments shown in our several stock exchanges in this country and more particularly on the Boston Exchange, where the copper stocks of intrinsically valuable properties have long been favorite investments for conservative business men. At the present time gold mines are "the rage" on both sides of the Atlantic, and Boston is showing examples of dangerous "booming" in them in some cases.

The stock of the Merced gold mine, of California, is quoted in Boston as high as $65, or $19,500,000 for the mine, and sales have recently been made at $43, or at the rate of $12,900,000, there being 300,000 shares, and yet the company has issued no reports by disinterested experts and gives no information by which anyone can estimate the value of the property. In answer to our request for information the officers of the company inform us that "there has been no public report or prospectus issued relating to the Merced gold mine."

The Merced is not a new mine; it was formerly worked unsuccessfully by several parties. Indeed, it is commonly reported that the Gwin family,

who worked it, lost many hundreds of thousands of dollars in the effort to make it pay. It was examined and reported on a few years ago by competent experts who placed its value very low indeed; let us say $100,000; the large reserves of ore in sight averaging about $4 a ton, though it was possible to find some richer ore in the mine. It is quite possible that the recent developments have opened ore worth $12 a ton, which we understand is the value stated by those interested; but it is scarcely possible that any large proportion of the ore in sight averages that figure, and it would require a vast amount of it to make the mine worth $12,900,000, or the stock worth $43. Proposing investors should get fuller information than has yet been made public to justify them in paying even a very small part of the present price for the stock.

We shall be pleased to make public any information the officers of the company may be willing to give on this subject. It is of great importance to the entire industry that mining investments be made safe and profitable. The Boston gentlemen who are connected with the floating of the Merced would certainly protest against a worthless "wild cat" being floated on the Boston Exchange at $1,000,000, yet at the present price of Merced the ultimate loss of investors in the stock may well amount to a dozen millions of dollars, assuming even that the mine will prove much better than those who formerly worked it found it then.

It seems to us that this stock is likely to bring great discredit on mining and enormous losses to investors. We shall be pleased to hear from those interested and also from those who know the property.

ELECTIVE COURSES IN MINING SCHOOLS.

In another column Doctor Wadsworth, the director of the Michigan Mining School at Houghton, gives an interesting account of the new departure adopted there in permitting the students to take "elective" courses; that is, to choose practically their own studies, following up those branches which seem to them most desirable and omitting others at their own option. This policy has been adopted to the fullest extent, and the required course reduced to a minimum. As the Michigan Mining School is to be credited with excellent work in the past, and as it numbers among its faculty most competent and careful instructors, we may be sure that this radical action has not been taken without full consideration, and that good reasons for it may be presented; some of them will be found in the paper referred to.

It is a radical departure from accepted methods, though perhaps only a development of a tendency which has been manifest in our educational institutions for some time, but which had hardly yet reached the technical schools. It is comparatively but a few years since the uniform four years' course prevailed in all our colleges, and the student was compelled to go over the same round of studies, whatever his choice of a future profession might be. In nearly all the larger and more important colleges, however, the elective system has made great progress, and the young man who wishes to become an engineer is no longer obliged to attend the same classes as the student who looks forward to the legal or medical profession. In the technical schools, however, there has been much less elasticity. While separate courses are offered for the civil engineer, the mining engineer and architect, for instance, each of those courses is usually a fixed one, and the student who adopts it is allowed but little variation. If he wishes to secure the degree, the certificate of the school to his proficiency, he must follow the regular round.

It has seemed somewhat of an anomaly that the boy attending college should thus be permitted a greater freedom of choice than that granted to the technical student, who is presumably older and more matured; who is at any rate past the preliminary stage of his education and has his future profession definitely in view. Doubtless a realization of the fact that this state of affairs was an anomalous condition has had its share in determining the action of the Michigan School.

Two reasons may be given for the slower development of the elective system in the technical schools. The engineering college itself is a modern growth. It does not take a very old engineer to remember the time when the Rensselaer Polytechnic Institute stood alone, and outside of its walls the only opportunities for a young man to learn the profession were in the field or the office under the charge of an engineer in actual work. It is not to be denied that this practical course turned out many able and competent men; but most of them would admit that the opportunities for theoretical study now presented would have saved them from many mistakes and many difficult hours.

Many of our older engineers also can remember the time when the profession was at once limited in its numbers and all-embracing in its scope. The "civil engineer" was supposed to be able to locate a railroad, to design its equipment, to superintend a mine, or to run a blast furnace as occasion might demand. The specialization of the profession and its division into the various branches of civil, mechanical, mining, metallurgical, chemical, electrical and architectural engineering has been the work of fewer years than many realize; and this work of differentiation is still going on.

Probably there is no one of the branches of the profession, as now generally recognized, in which there is more opportunity for this specialization than in mining and metallurgical engineering. The field is so wide and varied, and there are so many opportunities for the application of knowledge and skill, that no man can pretend to cover it all. To attain high rank he must devote himself to one branch alone, and generally it will take his best efforts to master that in theory and practice.

The greatest difficulty in adopting or authorizing elective courses in technical schools lies in the question as to how much preparatory or general education a young man should have before beginning his special work. Unfortunately, this much-discussed question cannot be decided with any approach to definiteness. Theoretically, it is claimed that the wider education a student has the better he is fitted for a special course; on the other hand, it has been urged by some educators that too much general work tends to prevent concentration, and may be an embarrassment. Practically the question is generally decided by the fact that most young men have but a limited time to devote to study, and must begin actual work at as early an age as possible.

One great advantage may be claimed for the elective course in a mining school. There are many men, doubtless, who have learned much by practical experience, and who realize the deficiencies in their knowledge which they would gladly make up by study, but who could not afford the time or money for a full course. To these a shorter term with the option of choosing those branches in which experience has shown them that they are most lacking, will be of the greatest benefit.

Upon the whole we think that the new departure of the Michigan Mining School is to be commended. There will be some disappointments and some mistakes, but it seems altogether probable that the results will justify the action of the faculty.

NEW PUBLICATIONS.

ATLAS OF THE STATE OF NEW YORK. Prepared under the direction of Joseph R. Bien, from original surveys and various local surveys, revised and corrected. New York: Julius Bien & Co. Plates, 35. Price, $30.

Different philosophers have proposed various tests of the degree of civilization to which a nation has attained, and we are inclined to think that to these may be added the perfection of its maps. If this test should be accepted we would be quite satisfied to rest the claims of New York to a high place upon the atlas now before us, which is certainly one of the finest specimens of map-making it has ever been our fortune to find. All engineers know the great value of a good map, and at the same time how worthless and irritating a poor one may be, and we think that all would appreciate those which Mr. Bien has prepared. In compiling them all available sources have been drawn upon, including the State and National geological and topographical surveys and the various local surveys which have been made from time to time. These have been carefully compared and brought together and use has also been made of the alignments and profiles made by the different railroad companies of the State, which cover a large part of its surface. It is difficult to see how greater correctness could have been assured. The maps of the State proper include one of the entire State on a scale of 1 in. to 12 miles, 36 district maps, including one or more counties each, on a uniform scale of 1 in. to 2½ miles, and city maps of New York, Brooklyn, Albany, Syracuse, Rochester and Buffalo. The local surveyor and real estate lawyer will thank the publishers for the addition of a map showing the location of the original land grants, patents and purchases to which reference is so often made in examining titles to property. A general map is given of the United States, and a series of statistical plates showing the distribution of population, the mean annual rainfall, the mean annual temperature, and the hypsometry of the State. Other plates show in graphic form, as compiled from the census reports, the growth of population, of wealth, of manufactures, of agricultural products, and of railroads, as well as the constituents of the population of New York State, taken by itself in comparison with the rest of the United States. The only text accompanying the atlas is a list of the towns, stations and postoffices of the State with appropriate references.

A complete examination of such a work by any one person is, of course, impossible, but a careful study of the maps of those portions of the State with which we are personally familiar has shown such completeness and accuracy that one feels quite willing to accept the rest as fully up to the standard.

As to mechanical execution, the atlas is an admirable one. The plates are finely engraved; they are not disfigured by bright colors, only neutral tints being adopted, and the names, numbers, etc., are large enough to be read without trying the eyes. It is really a treat to study such a map, and the compiler and publishers deserve public thanks as well as the more substantial reward which we trust they will receive for their labors.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

The Metallurgy of Iron and Steel. By Thomas Turner. Edited by Prof. W. C. Roberts-Austen. Vol. 1. The Metallurgy of Iron. London, England: Charles Griffin & Co., Ltd.; Philadelphia, Pa.; J. B. Lippincott Company. Pages, 367; illustrated. Price $5.

Engineering Contracts and Specifications; Including a Brief Synopsis of the Law of Contracts and Illustrative Examples of the General and Technical Clauses of Various Kinds of Engineering Specifications. By J. B. Johnson. New York; Engineering News Publishing Company. Pages 422; illustrated. Price $4.

Hendricks' Architects and Builders' Guide and Contractors' Directory of America, 1895-96. New York; Samuel E. Hendricks Company. Pages 832. Price $5.

Escuea de Ingenieros de Construcciones Civiles y de Minas Por Eduardo J. Habich, Director de la Escuela. Lima, Peru: Carlos Prince. Pamphlet, pages 24.

Transactions of the Australasian Institute of Mining Engineers. Volume II. Ballarat Session, March. 1894. Broken Hill, N. S. W.; Published by the Institute, Uriah Dudley, Secretary. Pages 140; illustrated.

Jahrbuch der Chemie. Bericht uber die Wichtigsten Fortschritte der Rei e und Angewandten Chemie. IV. Jahrgang, 1894. Hersgauegeben von Richard Meyer. Braunschweig, Germany; Friedrich Vieweg & Sohn. Pages 645.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents

Cadmium.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The subscriber would be pleased to hear from any of your readers who may wish to obtain cadmium. He has 150 tons of zinc ore, containing from 4 to 15% cadmium sulphide; also about 30 tons of fume containing cadmium, from which the cadmium can be easily and cheaply extracted. F. L. BARTLETT.

CANON CITY, Colo., Aug. 30, 1895.

The Four-Mile Placer District.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I have just seen your very valuable journal for August 3d, 1895, containing a very interesting article on placer mining in Wyoming and Colorado, with six fine pictures of the Four-mile Placer District. It describes "the Big Hole country" near by as being largely owned by the "Utah Mining Company." This, however, is a mistake, as that country is owned by the "Utah Gold Mining Company of Colorado and Wyoming." This correction is important, as there is another company in Utah named "The Utah Mining Company." CH. E. MALMSTROM,

Secretary Utah Gold Mining Company of Colorado and Wyoming.

MAPLETON, Utah, August 21st, 1895.

Making Briquettes of Manganese Ore.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I am interested in a very large surface deposit of manganese ore of the kind known as wad. The average analysis of the ore is: Metallic manganese, 45·00%; metallic iron, 15·00%; phosphorous, 0·05%; sulphur, 0·06%; silica, 5·33%. Owing to the character of the deposit it contains about 37% water and some chemically combined moisture, which is not driven off until the material is brought to a red heat. After being dried at 212° Fahr. it becomes a very fine powder and re-absorbs about 20% moisture. Can any of the readers of your valuable "Journal" suggest a process by which this mineral can be put into briquettes and made of some commercial value? RUSSELL P. HOYT.

NEW YORK, Sept. 5, 1895.

Notes on Magnetite.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Professor Phillips, in his "Notes on Magnetite," in your issue of August 17th, draws especial attention to the "very wide variation in the ratio between the iron as ferrous oxide and the iron as ferric oxide" in magnetites, and he quotes a number of analyses sustaining this statement.

I am able to furnish even more striking examples than those cited by him.

At the annual meeting of the Iron and Steel Institute, held in London on May 6th, 1874, I read a paper on "The Iron Ores of Lake Champlain," from which I quote: "Clinton County. Peroxidized Magnetites.—In contradistinction to Essex county the ores occur in distinct veins, pursuing in general a strike very nearly coinciding with that of the strata enclosing them. The walls are most regular, clearly defined, and the width well maintained. The surfaces are often striated. As long ago as 1840, Emmons called particular attention to the state of oxidation of the Clinton county ores, in the following words: 'If any differences prevail in this county as regards the constitution of the ores, they arise from the great amount of oxygen they contain.' One vein only had been examined, with a view to test the question of its state of oxidation, and this was the 'Arnold' vein. I have found that many of the decidedly black ores give a brown or reddish brown powder, an indication of a high state of oxidation. A fact which the bloomers also looked upon as an indication of good ore, is a red stain upon the rocks, or a reddish powder upon the surface of the ore."

COMPARATIVE ANALYSES OF ARNOLD HILL ORES.

	Indian.	Finchadit	Grey ore.	Black ore.	New blue.	Old blue.	Black abov old blue.
Sesquioxide of iron...	69·99	81·65	74·94	85·17	86·67	85·54	91·46
Protoxide of iron.....	8·87	7·87	6·19	5·57	2·70	2·39	3·69
Protoxide of manganese.....	0·38	trace.	.....	.....	.....	.....	0·14
Alumina.....	3·67	2·12	6·14	2·73	2·82	2·71	2·58
Lime.....	1·90	1·56	1·83	2·27	1·12	0·98	0·93
Magnesia.....	trace.	0·67	0·61	1·07	0·85	0·48	0·22
Sulphur.....	0·24	0·24	0·14	0·20	0·18	0·16	trace
Phosphoric acid.....	0·07	0·45	0·54	0·43	0·44	0·43	0·11
Silica.....	14·60	5·61	9·14	2·45	5·47	7·56	1·25
	99·72	103·16	99·74	99·89	105·25	100·25	100·38
Metallic iron.....	55·91	63·27	57.16	63·95	62·77	61·74	66·87

These statements in reference to the degree of oxidation have been fully confirmed by my own analytical examination of the ores from openings on Arnold Hill. The ores of Arnold and the neighboring Palmer Hill are remarkable for being made up of distinct well crystallized aggregations, retaining the crystalline form and lustre of magnetite and small percentages of protoxide, and for this reason I have spoken of them as peroxidized magnetites.

A fine collection of these ores, embracing many large crystals, was presented to the Mining Department of the Rensselaer Polytechnic Institute at Troy, N. Y., where I have no doubt they may still be found.

The celebrated "Rodgers" and "Peru" brands of forge irons and horseshoe nails were made from the Arnold and Palmer ores.

GEO. W. MAYNARD.

TIN OXIDES AND THEIR USES.*

By Erik Enequist.

Tin oxide or stannic oxide (SnO_2) is a white amorphous powder. It is quite hard and is used as a polishing material for glass. It is generally mixed with lead oxide and sold under the name of putty powder. It is manufactured from metallic tin by melting it and pouring the hot metal into water, thus feddering the tin. In this state it is introduced into an earthenware pot containing hot dilute nitric acid. The feddered tin oxidizes quite readily and the metal is fed in from time to time. Water has to be added, otherwise the precipitate would not be obtained in a thin state. After the requisite amount of feddered tin has been added to the nitric acid the process is interrupted, water is introduced, the contents of the pot discharged and more water added. The tin oxide, which is properly stannic acid of the formula H_2SnO_3, now settles to the bottom of the receptacle, and after three or four wash-waters have been employed the last water becomes milky and all acidity is eliminated. Tin oxide can also be manufactured from metallic tin by heating it and condensing the oxide which volatilizes, which is then obtained free from water.

Besides its use for polishing purposes tin oxide is a very important factor in the manufacture of all kinds of glazes in which whiteness is desired, also in the manufacture of enamel. A small quantity of the pure oxide will give enamel an intensely white color, and it is the best and most satisfactory material known for making opaque glaze or glass. The enameling industry consumes considerable quantities. Glazed brick and tile manufacturers also use large quantities of this oxide.

Stannous oxide (SnO) is a dark gray powder that slowly absorbs oxygen from the air, but in contact with nitric acid or other oxidizing agents it oxidizes with great violence. This oxide is made by permitting fused metallic tin to oxidize in the air and stirring the metal constantly. The product is, however, always mixed with more or less metallic tin and it is difficult to obtain it in a satisfactory condition. A better method is to precipitate stannous chloride with carbonate of soda or caustic soda and wash the precipitate, taking care to use wash water out of which the air has been expelled by steam. The lixiviated product is heated, with exclusion of air, and then obtained in a nearly pure state, owing to the affinity of this oxide for oxygen. It is employed in glass, enamel, etc., to prevent oxidization, as the stannous oxide will oxidize in preference to anything else. The precipitated stannous oxide has a very smooth and even appearance and must be kept in well-sealed packages. It is also used in the production of copper-ruby glass. It is quite likely that this material can be put to more important uses when it can be obtained at a lower price than the present, which is about 60c. per pound. Moreover, very little, if any, of that in the market is of satisfactory quality.

German Coke for Australia.—Mr. Theodore M. Stephen, United States Consul at Annaberg, writes to the Department of State that a dozen large sailing vessels have been chartered to load coke for Port Pierie, Australia, where it will come into competition with the Durham (English) coke. The Durham producers believed that they could retain without trouble the Australian market, having supplied it almost exclusively ever since it existed, but they may find German competition an important factor in the future.

Railways in Persia.—The Persian Government has asked the Russian Government to dispatch to Persia a party of civil engineers to make the necessary surveys for the construction of a railway to connect Teheran and Tabriz with the Transcaucasian Railway at Djulfa and Lenkeran. The expense of the mission is to be borne by the Persian Government. The engineers, it is reported, will also draw up estimates for the extension of the above railway in different directions. The Persian Government proposes to cover the expense by means of a special tax.

Electrical Work in Japan.—Japan has been quick to take advantage of electrical applications in her mining industries. Although the cheap labor is rather an obstacle to the installation of power plants, they are making headway, and, judging by the figures recently given out of the value of Japan's electrical imports, this country is gaining the business very rapidly. According to a German authority, the value of dynamos exported from Germany to Japan in 1892 was 73,741 yen, which far exceeded that from Great Britain or the United States; in 1894, however, those imported from Germany amounted to 18,120 yen, from England 49,222 yen and those from the United States 145,200 yen.

Advantages of Electric Light in Bad Air in Mining.—The results of some recent experiments of Dr. Haldane have been made public. They refer to the presence of black damp; he finds that when the percentage of oxygen has fallen to 17·64 a candle is extinguished, at 3·38% of carbonic acid gas and 15·3% of oxygen his respiration began to deepen, and at 7·32 and 9·6% respectively there was violent panting; at 7% of oxygen consciousness would probably have been lost. He thus shows that there is a wide margin between the point of the extinguishing of a lamp and the point of danger to life; a miner provided with an electric lamp could therefore penetrate with impunity or escape through atmosphere containing at least three times as much black damp as would extinguish a lamp and the difficulty of respiration would give ample warning if the electric lamp did not.

* Extract from article on "Some Metallic Oxides, their Practical Production and their Uses," in the "Mineral Industry." Vol. III. Copyright, 1895, by the Scientific Publishing Company.

THE PURIFICATION OF BOILER FEED WATERS.

Written for the Engineering and Mining Journal by Dr. Francis Wyatt.

The nature of the injury inflicted upon a boiler, and the degree of corrosion or incrustation produced in it, alike depend upon the character of the available water supply. If a water contains more than five parts per 100,000 of free sulphuric or nitric acid, for example, it will certainly cause serious corrosion, not only of the metal of the boilers itself, but of the pipes, cylinders, pistons and valves with which the steam comes in contact. It is true that such waters are not common, but in the coal and iron districts, sulphuric acid is sometimes very troublesome. Iron pyrites are oxidized to sulphate of iron, and the soluble sulphate is washed out from the strata and carried into the streams. The presence of organic matter taken up by the water in its aftercourse reduces the iron; the bottom of the stream becomes lined with the red oxide, and a considerable proportion of sulphuric acid is left in the free state. In some other places muriatic and nitric acids may be conveyed into the water through the refuse discharged into streams by various kinds of manufacturing industries. A large total mineral residue in water used for making steam, causes incrustation of the interior linings of the boiler, clogs their action, and produces a very dangerous hard-scale, which not only involves loss of fuel, by offering great resistance to the transmission of heat, but is liable at any moment to crack and produce a disastrous explosion.

The kind of hardness known as "temporary" is characteristic of waters from chalk and limestone formations, and is attributable to calcium and magnesium bicarbonates. Otherwise expressed, it is due to the carbonates which depend for their solubility in water on the presence of carbonic acid gas. It follows from this that by merely boiling such waters for a sufficient time to expel all the carbonic acid they may be very readily made soft, and this would, therefore, be the simplest plan to adopt in all cases if it were not for the fact that where very large quantities of water are required for daily use boiling becomes not only troublesome, but very costly. An equally satisfactory and more practicable method of softening consists in adding to the water so much of freshly burnt lime as will suffice to absorb the carbonic acid and throw out of solution, with the earthy carbonates, any iron and the greater portion of any organic matter present. To those who are not familiar with this beautiful and yet simple process, its rationale may easily be made clear. In the first place, waters of "temporary" hardness contain lime and magnesia in solution, probably in the form of bicarbonates, thus:

$$\underset{\text{Insoluble carbonate of lime.}}{CaCO_3} + H_2O + \underset{\text{Carbonic Acid Gas.}}{CO_2} = \underset{\text{Soluble bicarbonate of lime.}}{CaH_2(CO_3)_2}$$

$$\underset{\text{Insoluble carbonate of magnesia.}}{MgCO_3} + H_2O + \underset{\text{Carbonic Acid Gas.}}{CO_2} = \underset{\text{Soluble bicarbonate of magnesia.}}{MgH_2(CO_3)_2}$$

If burnt lime (CaO) be added to this water it will at once, in its avidity for carbonic acid gas, degrade the bicarbonates and render them insoluble, thus:

$$\underset{\text{1 part of soluble bicarbonate of lime.}}{CaH_2(CO_3)_2} + \underset{\text{1 part of burnt lime.}}{CaO} = \underset{\text{2 parts of insoluble carbonate of lime.}}{2\,CaCO} + H_2O$$

$$\underset{\text{1 part of soluble bicarbonate of magnesia.}}{MgH_2(CO_3)_2} + \underset{\text{1 part of burnt lime.}}{CaO} = \underset{\text{1 part insoluble carbonate of magnesia.}}{MgCO_3} + \underset{\text{1 part insoluble carbonate of lime.}}{CaCO_3} + H_2O$$

+ Water.

The quantity of burnt lime required to bring about this softening reaction in 1,000 gallons of water is approximately 1¼ oz. for every part per 100,000 of temporary hardness, as determined by the soap test. In practice, the lime is placed in a large bucket and thoroughly slaked, the thick milk is poured off into about 300 gallons of water in the water tank, care being taken to add none of the sediment or lumps. The residue is continuously mixed up in the bucket with more water, and the milk is poured off into the tank, until all the lime has been used up; 700 gallons of the water are then rushed into the tank with sufficient force to insure a most complete agitation and mixture of the contents. If the flow of water is not strong enough for this purpose, the mixture must be made by means of suitable stirring apparatus, either by hand or mechanically. The appearance of the water will now be very milky, and it must either be allowed to stand and settle for several hours, or must be filtered through a filter press in order to remove the carbonates. The proportion of lime to water may be very accurately adjusted during the running in of the water to be softened, by withdrawing small samples from the tank every five minutes in a small white cup, and adding to it a drop or two of solution of nitrate of silver. As long as there is burnt lime present in excess, the silver will produce a brownish coloration, and as soon as this becomes very faint, and hardly distinguishable, the flow of water must be stopped.

The kind of hardness in boiler feed water which is called "permanent," is chiefly due to sulphates of lime and magnesia, and it is necessary to alter these by chemical treatment, either outside or within the boiler. The object of the treatment is to produce soluble salts, which upon concentration will not form a scaly deposit, and there are many ways of accomplishing this end. One of the most popular is by the use of either sodic carbonate or hydrate, the former being preferable for lime, and the latter for magnesia hardness. The reactions that take place may be illustrated as follows:

$$\underset{\text{1 part of sulphate of lime.}}{CaSO_4} + \underset{\text{1 part of Sodic carbonate.}}{Na_2CO_3} = \underset{\text{Carbonate of lime.}}{CaCO_3} + \underset{\text{Sodic sulphate.}}{Na_2SO_4}$$

$$\underset{\text{1 part of Sulphate of magnesia.}}{MgSO_4} + \underset{\text{Caustic soda.}}{2\,NaHO} = \underset{\text{Magnesia hydrate.}}{MgH_2O_2} + \underset{\text{Sodic sulphate.}}{Na_2SO_4}$$

If the insoluble carbonate or hydrate be filtered off or allowed to settle out, the sodic sulphate remaining in solution has no scale forming or other injurious effect on the boiler metal; and in general practice boiling the water in an outside open vessel for fifteen minutes with sodic hydrate in the proportion of 2 oz., or with dry sodic carbonate in the proportion of 2½ oz. for every part of permanent hardness per 100,000 and per 1,000 gals. water, gives good results. The chief defect in the process is the impossibility of removing all the lime and magnesia on account of their slight solubility in water, and in many cases this defect is a fatal one, because magnesia hydrate is the most troublesome of all scale formers, in that it is more readily baked, much harder and most difficult to remove.

When it is necessary to treat the water within the boilers themselves, the use of caustic alkalies is not so advisable, and they may be replaced with advantage by either sodic tannate, sodic triphosphate or sodic bichromate, all of which have a specific chemical action. That of sodic tannate consists in forming soluble calcic or magnesic tannates, and soluble sulphates or chlorides of sodium. That of trisodic phosphate produces soluble sulphates, and fine and granular precipitates of calcic and magnesic phosphates, which do not adhere to the plates, and which are readily and easily blown off. That of sodic bichromate produces equally fine and granular precipitates of calcic and magnesic chromates, as well as soluble sulphates, as may be inferred from the equations:

$$\underset{\text{1 part bicarbonate of lime.}}{CaH_2(CO_3)_2} + \underset{\text{1 part bichromate of soda.}}{Na_2Cr_2O_7} = \underset{\text{1 part chromate of lime.}}{CaCrO_4} + \underset{\text{1 part chromate of soda.}}{Na_2CrO_4} + \underset{\text{2 parts carbonic acid.}}{2CO_2} + H_2O$$

$$\underset{\text{1 part sulphate of lime.}}{CaSO_4} + \underset{\text{1 part bichromate of soda.}}{Na_2Cr_2O_7} = \underset{\text{1 part chromate of lime.}}{CaCrO_4} + \underset{\text{1 part sulphate of soda.}}{Na_2SO_4} + \underset{\text{Chromic acid.}}{CrO_3}$$

$$\underset{\text{1 part sulphate of magnesia.}}{MgSO_4} + \underset{\text{1 part bichromate of soda.}}{Na_2Cr_2O_7} = \underset{\text{1 part chromate of magnesia.}}{MgCrO_4} + \underset{\text{1 part sulphate of soda.}}{Na_2SO_4} + \underset{\text{1 part chromic acid.}}{CrO_3}$$

The use of bichromate of soda in very slight excess as a boiler compound has not hitherto received much attention, and its properties in this connection are, therefore, generally unknown. It was long supposed that the calcic, or magnesic chromates, formed in the above equation, would be again decomposed into sulphate or carbonate by the alkaline soda salts in solution, and that the reactions would, therefore, go on repeating themselves in an endless chain, and produce no practical effect. This supposition was based upon what takes place in boiling solutions, in open vessels, and without any reference to high pressure. Experiments have demonstrated that at high pressures the action is reversed, and that the earthy chromates are undoubtedly all deposited and very readily removed by "blowing off." Even if an excess of sodic chromate continuously remains in solution, however, it can have no action whatever on the boiler, and the use of bichromates, in the proportion of 2¾ oz. for every part per 100,000 of permanent hardness in 1,000 gallons of water, has the additional advantage over all other scale preventers, of furnishing perfectly neutral steam, and chemically pure distilled water.

In introducing a boiler compound, of any nature, directly into a boiler, it should be the constant aim to avoid using excessive quantities at any one time. If this precaution be neglected, the material is most likely to be either used up, or wasted, every time the boiler is blown off, or to produce very unfavorable results on the boiler metal. It is far better to add a definite quantity of the chemical each day, and to regulate it according to the amount of water to be evaporated and the amount of salts that are to be transformed from the insoluble to the soluble form.

SOUTH AFRICAN INDUSTRIAL EXPOSITION.

Our correspondent at Cape Town informs us that there is to be held in Cape Town an International Industrial Exhibition under the auspices of the Chamber of Commerce, with the patronage of the Colonial Government, with Sir Hercules Robinson as Patron and the Hon. Cecil Rhodes, Honorary President, and under the management of the American Exposition Company, and good management is promised the exhibitors.

Good Hope Hall, with gardens, and Masonic Hall have been secured for holding the Exhibition. They are situated in the heart of the residential portion of the city and within a mile of the docks. They are centrally located and adapted in every way to the holding of an exhibition.

The Government railways have given their endorsement, and are to grant excursion rates from all points in the Colony; the Dutch railways have also promised to lend their aid to advance the interests of the exhibition. Steam and electric power will be furnished exhibitors free. Gold and jewelled medals (the products of the country) will be awarded.

The exhibition will open November 18th for a period of six weeks; this is the summer season when the colonists from all parts of South Africa come to Cape Town to spend the holidays and shop, and exhibitors will so reach the more important inhabitants of the interior cities.

The price of space will be uniform—8s. or $2 per square foot will be charged. The grounds and buildings are so well adapted for an exhibition that there is really very little choice of location.

American machinery and manufactures have already gained a strong foothold in South Africa and our manufacturers and dealers will doubtless appreciate the opportunity of making themselves still better known.

A Large Oil Tank Steamer.—The new oil tank steamer "Chesapeake," Capt. Payne arrived in New York recently on her first voyage from Greenock, Scotland. The "Chesapeake" registers 4,555 gross tons and 2,925 tons net. She was built at Port Glasgow by D. J. Dunlap & Co., for the Anglo-American Oil Company, Limited, of London. On her trial trip the "Chesapeake" made an average speed of 12¼ knots. This new steamer is said to be the largest oil steamer afloat, her dead-weight carrying capacity being 6,000 tons. Her engines and boilers are situated amidships, instead of in the after part of the vessel, as in the ordinary oil tank steamer. She is rigged with two pole masts.

VARIATIONS IN THE MILLING OF GOLD ORES.—XII. THE BLACK HILLS, SOUTH DAKOTA.*

Written for the Engineering and Mining Journal by T. A. Rickard.

The first mining excitement occurring in this region is to be credited to the year 1875, when placer discoveries were made at Custer City, at that day the frontier post and the starting point for prospecting parties. In June of the following year the Wheeler Brothers found rich gravel in Deadwood Gulch, between the sites of the present towns of Deadwood and Central City. They, and others who came later, cleaned up that November, pulled up stakes and sold their claims. A party of about 30 men carried the result of the season's labors, namely, gold of a value of from $800,000 to $900,000, to the First National Bank at Cheyenne.

At that time, early in the story of the restless development of the Rocky Mountain region, the outcrops of quartz veins were found by the pioneers, but the California and Montana miners who were among them tested the value of the ore by means of panning, and recovering only from $3 to $10 per ton, they ridiculed the idea of operating on material of so low a value.

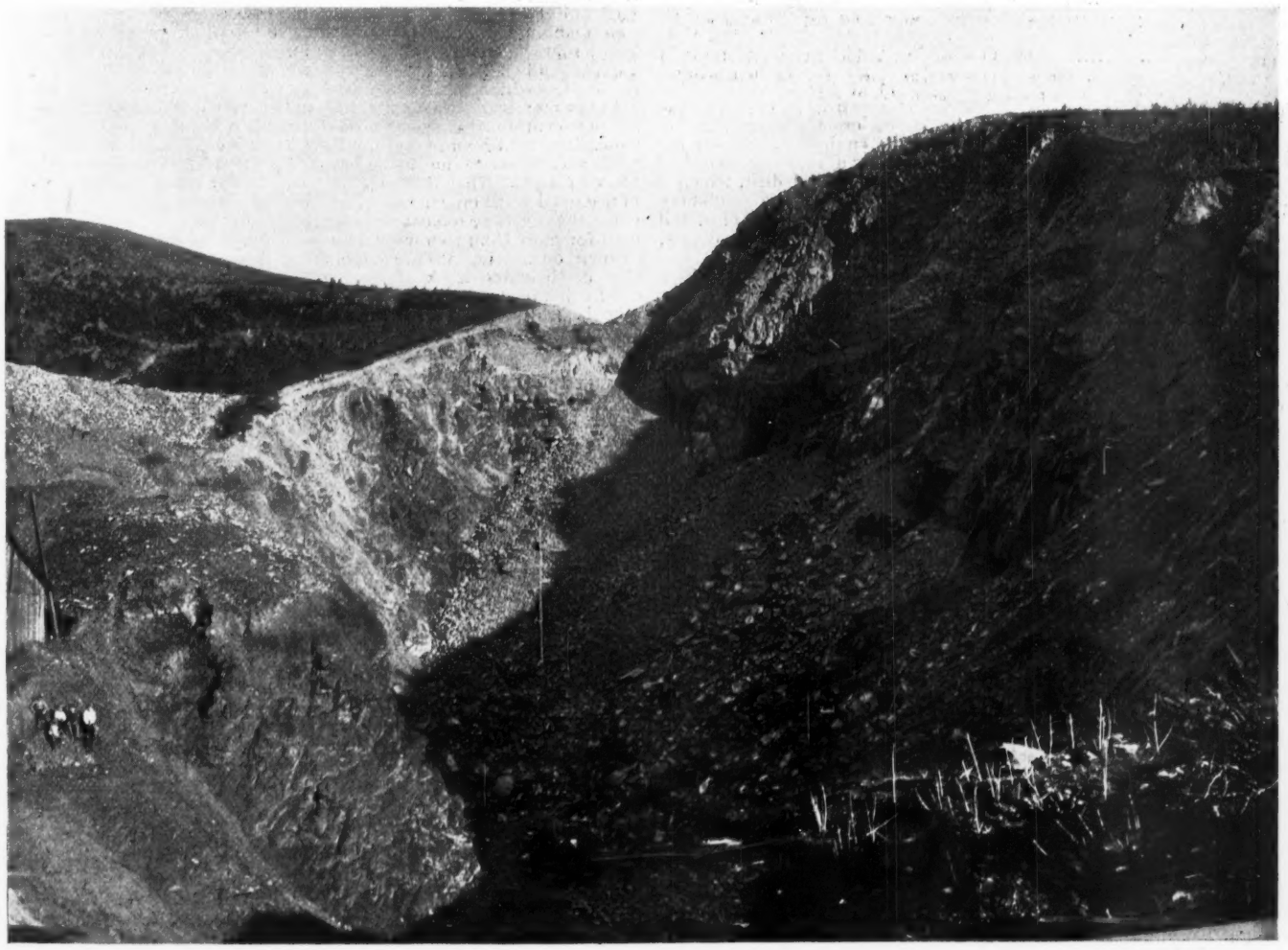
On April 7th, 1877, a five-stamp mill for the Racine Company arrived at the lower end of what is now Lead City. On April 20th the first clean up took place. On May 1st the second stamp mill, Pearson's, reached Central City.

The history of the Homestake Mining Company begins with the arrival, in the fall of 1876, of representatives of Haggin and Hearst, of San Francisco. In January, 1877, Sam McMasters, another agent of the same syndicate, came; in February some of the mines were purchased, and on October 23d the Homestake No. 1 claim was bought from Manuel Brothers. In July of the following year the first, and only, assessment was levied. It was at the rate of $1 per share, and afforded the $200,000 required for the erection of the first mill. This was of 80 stamps, and was brought in on a bull train. It now forms part of the present Homestake mill. As the magnitude of the ore deposit became proved by exploration, the milling capacity was increased, until the Homestake became a name associated with the successful operation, on an enormous scale, of large bodies of gold ore of very low tenor.

The Black Hills, geologically an archæan island flanked by later sedimentaries, topographically a group of granite peaks surrounded by clustering foot-hills, forms the only important mining region of South Dakota. Extensive and important mining operations are largely confined to what is known as "the Belt," extending from Whitewood Creek to Deadwood Gulch, through the linked settlements of Lead City, Terraville and Central City.

The ore occurs in the form of large bodies of quartzified chloritic schist conformable to the structure of the country and forming a portion of it. The area of territory which has been proven profitably gold-bearing is about a mile and a half long by half a mile wide. The width of milling ore varies from 50 to 400 ft. Huge excavations have been made along the surface croppings of the lode, the ore going direct to the mill, while the waste material is sent down into the mine to fill up the underground stopes.

In 1888 there were 660 stamps dropping on the mill stuff broken upon the belt: to-day the number is 550. The richer ore bodies of the De Smet and Caledonia mines have given way to material too low in gold contents to be profitably worked. The mills of the Homestake Mining Company (shown in the accompanying illustration), however, show progressive enlargement, as is indicated in the accompanying table (No. 1), which gives the names and sizes of the various plants in this district.



DEADWOOD-TERRA OPEN CUT.

TABLE NO. 1.

The Stamp Mills of the Belt, South Dakota.

Name.	Date of erection.	Location.	Number of Stamps. 1888.	1895.	Owners.
Homestake	1878	Lead City	80	100	The Homestake Mining Co.
Golden Star	1879	Lead City	120	150	
Highland	1880	Lead City	120	140	The Highland Mining Co.
Deadwood	1879	Terraville	80	160	The Deadwood-Terra Mining Co.
Golden Terra	1880	Terraville	80		
Father de Smet	1878	Central City	100	100	The F. de S. Mg. Co.
Caledonia	1879	Tenaville	80	80	The Caledonia M. Co.
Columbus	1894	Central City	—	10	

Referring to the above, it may be added that the Homestake was an 80-stamp mill when first built, and it is still often spoken of as "the 80 mill." The Highland is now being increased from 120 to 140 stamps. The Deadwood and the Golden Terra were consolidated six years ago, the 80 stamps of the Terra being placed behind the 80 stamps of the old Deadwood mill. The plant is now known as the Deadwood-Terra. The De Smet ceased work in 1892, and the Caledonia in 1893. The Columbus is a new, small plant, treating ore from the outskirts of the Belt at Central City.

Before plunging into an account of the milling methods it seems needful to apologize for undertaking the task in the face of the very excellent description prepared by Prof. H. O. Hofman, which appears in Vol. XVII of the "Transactions" of the American Institute of Mining Engineers. My excuse is that during the interval of seven years since that article was prepared some changes have been made at the mills, and, furthermore, I felt that the series of contributions on stamp-milling which have been prepared by me for the "Journal" would be incomplete without some reference to the methods of so famous a milling center as the

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Black Hills. To escape unnecessary repetition, however, I have avoided dealing with certain aspects of the milling practice, which are so fully handled by Professor Hofman, in the paper above referred to, as to render my account of them a work of supererogation.

The immense size of the ore bodies from which the mills get their daily supply is well suggested in the accompanying photograph of one of the big open cuts. Another illustration shows the distribution of the Homestake mills and the general appearance of the Belt in the vicinity of Head City.

The ore as it comes up from underground is dumped into the rock breakers. Formerly, until 1889, it went to the mill and was unloaded upon grizzlies, from which the coarser portion went to the crusher floor. The Blake crusher was at that time in use, but the successful trial of the Gates' machine, at the Caledonia mill, led to the introduction of the latter all over the Belt and to the entire replacement of the former. Those in use are as follows:

Mill.	Number of crushers.	Size.
Homestake	3	Gates No. 6.
Highland	2	Same.
Deadwood-Terra	2	Same.
Caledonia	1	Same.
Columbus	1	Gates No. 1.

The first reduction of the ore by the breakers at the mine instead of at the mill is a decided and very obvious improvement. It renders more easy the loading of the cars which transport the ore to the mill; it does away with the unequal strain upon the mill engine when the rock-breaker, as is too often the case, is not worked by a separate source of motive power, and it eliminates the larger portion of the dust, which is such a nuisance not only to the men at work, but also to the machinery of the mill. Furthermore, it enlarges the capacity of the ore bins, and does away with the necessity of having two series, one for the coarse, above the crusher floor, and one for the fines, below it.

By having a spare breaker, as is the case at the Homestake shaft, where only two out of the three are in use at any given time, there need never be any interruption to the regular passage of the ore as it comes out of the mine, through the crushers, into the mill cars.

The larger receiving capacity of the Gates and its greater crushing power render it preferable, in large mills certainly, to the Blake. The idea of first reducing the ore at the mine is common in California, the breaker at the mine being sometimes followed by a further reduction of the ore by a second breaker at the mill itself. This tendency is good, because the relieving of the stamps of the hard work of first crushing aids rapid pulverization in the mortar and gives conditions more favorable to successful amalgamation.

In the accompanying table (No. II) will be found the chief figures telling of the milling practice. The table has not the variety which would be evidenced in other districts, because the management of the Homestake also controls the neighboring mills, with a consequent tendency toward a general uniformity of methods.

Referring to the comparative table, the following notes will be pertinent. he total dropping weight of the stamp in all the Homestake mills was originally 850 lbs., but the tappets and bosses have been made heavier so as to make the weight now approach 900 lbs. The number of drops per minute varies of course. I found it to average nearer 88 than 85, the latter being the figure given to me by the millman. The height of the drop appears to have undergone a slight increase since 1888. At the Deadwood-Terra it was 9 and 9½ in. until quite recently. The reason given for the change is the idea that a longer interval between the drops permits the stamp to turn upon the ore, a purely theoretical consideration quite secondary to the fact that the slightly increased interval is found in practice to diminish breakages by preventing the horn of the cam from striking the tappet too soon.

In the matter of the depth of discharge the variation is due to the wearing down of the dies. The importance of this factor in gold milling is universally underestimated. At the Homestake a serious effort is made to obtain some approach to uniformity in the issue by the use of chuck-blocks of different sizes. The chuck-block serves as a false lip to the mortar; it is in the form of a piece of 2-in. plank bolted to a 1¾-in. board, the latter projecting about 2 in. beyond the former, to which a copper plate is attached. The replacement of the 2-in. plank by ¼ in. iron, a method introduced some years ago, has been abandoned since the slight increase (1⅛ in.) in the distance between the chuckblock and the shoe was not needed in a mortar whose chief characteristic is its narrowness and whose primary intention is to promote rapid crushing. In the old Caledonia there were two inside amalgamating plates because the design of the mortar permitted it and the character of the particular ore suggested it. In the Homestake mills, however, there is only one inside plate which is of plain copper and 5 in. wide. When new dies are introduced they are accompanied with the use of a chuck-block 7 in. high, making the distance from the bottom of the screen to the top of the die about 9 in. After two weeks have elapsed this 7 in. chuckblock is replaced by one only 5 in. high, the difference between the two being approximately equivalent to the wearing down of the dies. The copper on the first chuck-block is straight, on the other it is slightly curved and mounted on thicker wood so as to bring it nearer the stamp. The aim is to have the bottom of the chuck-block level with bottom of the shoe. After from four to six weeks the dies are worn out, and at that time the discharge has reached a maximum of about 11 inches.

At the Deadwood-Terra three chuck-blocks, 5, 6 and 7 in. high respectively, are in use. It is intended to keep the top of the die about level with the bottom of the chuck-block. The discharge increases from a minimum of 9 in. to a maximum of over 11 in. In the Columbus mill two inside plates are employed. The front one is 5 in. wide, and is attached to a 5-in. chuck-block. The back one is 8 in. wide, and is fastened to the mortar itself. Although the latter has only 12 in. of inside width, both plates do good work. The violent agitation of the pulp and the scouring of the surface of the plate, which might be expected to occur in so narrow a mortar, are minimized by the fact that the issue is so deep that the stamp is never lifted clear out of the water, but produces a steady pulsation rather than an irregular splash against the screen and the inside plates. The Columbus mill, however, crushes less ore than those on the other side of the hill. The mortars are arranged in pairs, with a passageway between each pair. The automatic feeding of the ore is done by Hendy "Challenge" ore feeders in four of the mills (the De Smet, Golden Star, Homestake and Deadwood-Terra), and by Tulloch feeders in two (the Highland and Columbus). The relative merits of these two machines are now well recognized, the main points of distinction being that the Hendy is much the more expensive, but it is also the most automatically perfect, and can treat wet ore as well as it can dry millstuff, for feeding which the Tulloch is not so well adapted.

In the matter of screens the mills under the Homestake management are uniform in the use of No. 8 diagonal slot punched Russia iron, equivalent to 30 wire mesh. They usually break before they become worn out, owing to the Russia iron being brittle along the edges of the rows of slots. They are not, however, in any case permitted to remain in use until worn out, because the openings would be so enlarged as to make the crushing too coarse. At the Homestake mills they are never used for more than two weeks, but as a matter of fact they are generally thrown out, owing to breakage, after from six to eight days. At the close of their first week of service they are turned upside down. The chief cause of breakage is the chips from mine timbers, which become mixed with the millstuff and impinge against the screen so as to dam up the pulp and expose the punched iron to a pressure beyond its strength. At the Deadwood-Terra the screens last an average of nine days, because the material treated is mostly surface ore, and in such there are less chips, because less timbering is done than in the big underground stopes. At the Columbus mill 30-mesh brass wire is employed. Three sets of screens are in constant use for each battery, and every day one is replaced by another, while the third is undergoing a cleaning. The screens are first dried and then rubbed with a brush such as is used for chinaware so as to free the wires from adhering material. Formerly No. 6 burr slot screens were used at the Homestake mills. Then No. 7 came into use, but now the No. 8 smooth slot is claimed to be the best variety. It is stated that wire cloth cannot be used, because of the wood chips in the ore, and that when it was tried a few years ago in the Golden Star mill a screen was burst out every forenoon. Aluminum bronze slot screens gave good service, but proved too expensive. It has always been the custom to take out the screens and replace them with new ones before they become actually worn out. To retain them would be false economy, because their retention too long in service means coarse crushing, consequent upon the erosion of the edges of the openings. It is much to be regretted that the above-mentioned chips should render wire cloth impracticable, because with such screens not only is there greater proportionate area of discharge, but, owing to the fact that the wires do not wear so easily, the apertures remain of constant size and it is simple breakage only which brings the life of the screen to a close.

Mercury is fed into the battery in quantities proportioned to the richness of the ore and regulated by the condition of the amalgam on the apron plates. At the four principal mills the rate at which the mercury is fed can be judged by the accompanying record, covering the two weeks previous to my visit. See Table III.

TABLE NO. II.

Indicating the Milling Practice of the Black Hills District, South Dakota.

Name of mill.	Number of stamps.	Weight of stamp.	Number of drops.	Height of drop.	Depth of discharge.	Variety of screen.	Percentage of concentrates.	Ore crushed per stamp in 24 hours.	Capacity of entire mill.	Wear of screens.	Consumption of water.	Retort percentage.	Fineness of bullion.	Number of c'nc'ntrators.
		lbs.		inches.	inches.		%	tons.	tons.	days.	miners' ins.	%	per 1,000.	
Homestake	100	850	85	9½	9 to 11	Slot No. 8.	2	4	400	7	1½	34 to 38	815	6
Highland	140	850	85	9½	9 to 11	Slot No. 8.	2½	4	560	7	1½	35 to 37	815	8
Golden Star	160	850	85	9¼	9 to 11	Slot No 8.	2	4	640	7	1½	34 to 38	815	8
Deadwood Terra	160	850	88	8½	9½ to 11½	Slot No. 8.	none.	4¼	680	9	1⅜	33 to 35	830	none
Columbus	10	850	90	8	8 to 10	Wire, 40 mesh	6	3½	35	10	1	28 to 48	825	1

Mercury is fed into the battery in quantities proportioned to the richness of the ore and regulated by the condition of the amalgam on the apron plates. At the four principal mills the rate at which the mercury is fed can be judged by the accompanying record, covering the two weeks previous to my visit. See Table III.

TABLE NO. III.

Consumption of Mercury at the Homestake Stampmills.

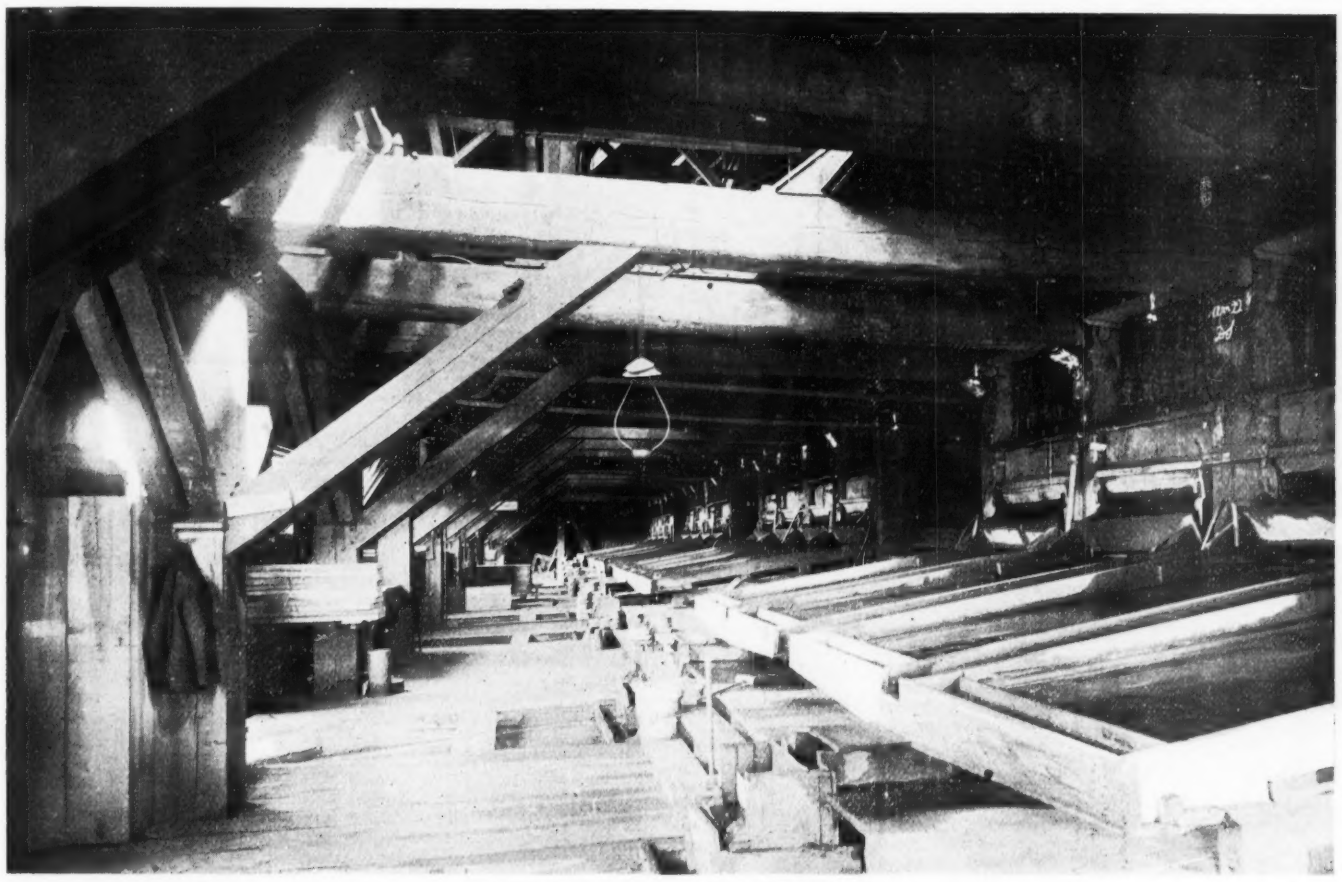
	Deadwood-Terra. 160 stamps.		Golden Star. 160 stamps.		Highland. 120 stamps.		Homestake. 100 stamps.	
Date.	Lbs.	Oz.	Lbs.	Oz.	Lbs.	Oz.	Lbs.	Oz.
May 1, 1895	11	5	25	13	15	4	(a) 9	10
" 2, "	10	2	(a) 17	14	(a) 12	9	12	2
" 3, "	10	0	25	16	15	1	13	0
" 4, "	12	2	24	13	1	10	12	12
" 5, "	(a) 9	12	25	3	10	6	11	7
" 6, "	10	6	24	8	16	8	12	2
" 7, "	11	11	23	2	17	0	12	8
" 8, "	11	6	24	12	19	3	12	15
" 9, "	11	8	23	13	19	8	12	13
" 10, "	10	14	25	3	18	12	12	13
" 11, "	11	0	23	7	18	8	12	7
" 12, "	10	12	24	6	17	4	11	1
Average per day	11	4	24	3	17	2	12	2

(a) Indicates clean-up days.

It will be observed that though the Golden Star and the Deadwood-Terra mills crush approximately the same amount of ore, the former uses more than twice as much mercury. This fact is explained by the wide difference in the richness of the ore, for while that crushed in the batteries of the Golden Star averages from $4 to $5 per ton, that which goes through the Deadwood-Terra ranges from $1.50 to $2 per ton.

For the year ending June 1st, 1894, the Homestake mill used 2,084 lbs. and the Golden Star mill 3,440 lbs., making a total of 5,524 lbs. avoirdupois, which at the price obtaining that year, 42c., makes the value of the mercury used $2.320.13. During that time 309,210 tons of ore were crushed, so that the consumption was at the rate of about 5 dwts. Troy or ¾c. per ton. At the Deadwood-Terra 205 lbs. were used in February, 1895, in treating 18,483 tons of ore. It is estimated that 22% of the amount of mercury used is lost.

At the Homestake Mining Company's mills the water used in the batteries is at the rate of 1½ miner's inches per battery of 5 stamps per 24 hours. This is equivalent to 23,414 gals. per battery, or a little over 3 gals.



INTERIOR VIEW OF THE GOLDEN STAR MILL.

per stamp per minute. At the Deadwood-Terra it is a little more, at the Columbus a little less. The quantity of water used is proportioned to the quantity of pulp crushed and its specific gravity, the intention being to so regulate this factor as to produce a slow wavelike movement over the outside amalgamating tables and to so thin the pulp as to aid the separation of the gold without having such an excess of water as would rush the crushed ore too rapidly over the amalgamating surface.

In winter the water occasionally runs low. It is then used over again by the intermediation of the two setting dams constructed in the gulch below the mills, the water being pumped back when the mud has settled. The mine water is also often used to supplement the ordinary supply when otherwise insufficient.

(To be continued.)

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

SUPREME COURT OF ARKANSAS.

Competency of Servants.—The employment, as trapper in a coal mine, of a boy 14½ years old, shown to be competent and careful, and who has had several years' experience in various kinds of work in coal mines, is not negligence, so as to render his employer liable to a fellow servant for his carelessness.—Kansas & Texas Coal Company vs. Brownlee, 31 South western Reports, 453.

SUPREME COURT OF COLORADO.

Indefiniteness of Contract.—A contract provided that a party should bond a mining property for three years at a sum named and give a working lease on it for the same time, holding one-fifth interest in the net profits of the lease, the mines to be developed for sale, and ore to be shipped when convenient and profitable, the party to be employed in the mines and profits to be divided. It was held, that the agreement was too indefinite to sustain a decree for specific performance. A promise for a promise is not such a consideration as will support a decree of specific performance, nor does the presence of seals import such a consideration.—Winter vs. Goebner, 40 Pacific Reports, 570.

SUPREME COURT OF MONTANA.

Notice of Location of Mining Claim.—Under the statute, requiring one who discovers a mining claim to file a declaratory statement of such discovery or location, on oath, describing said claim in the manner provided by the laws of the United States, the statement must be of the discovery or location, as well as of the description of the claim, and an affidavit which merely states that "the description of said lode," is true, is fatally defective. The statement, in a verification of a location notice, that the locators have "fully complied with the requirements" of law and local customs regulating mining locations, is merely a conclusion of law, and does not verify any fact.—McCowan vs. McLay, 40 Pacific Reports, 602.

SUPREME COURT OF IOWA.

Agreement Creating Landlord and Tenant—An agreement was in question whereby a party had the exclusive right to mine coal under certain land for 20 years, unless the coal sooner gave out, and to use in connection with the mine five acres of the surface land to erect buildings upon, and to build and operate railroads and flow water over such land for a certain royalty per ton of coal mined, not to fall below a fixed amount per year, payable as rent for all the privileges granted. Such agreements confer present rights; they are assignable; they are for a fixed period; they provide for an annual rental independent of the mining of coal; the right to mine the coal is exclusive in the lessees for the period fixed in the lease; the rent or royalty is by express terms payable for all use of the surface of the land, as well as for other privileges specified and for coal mined. In principle, the rights granted are not different from those where one leases a stone quarry, or sand-bed, or the like. The fact that in the one case the article taken is on or near the surface and in the other it is beneath the surface is no reason why in the one case privileges granted to take and carry away stone or sand should be held to be leases and in the other the right to mine and carry away the coal and the valuable surface rights granted should be held to constitute a sale of the coal merely. In either case the sum stipulated to be paid, whether it be called "rent" or "royalty," is a profit issuing out of the use granted, even more so than it would be to use the land for agricultural purposes. In the latter case no perceptible quantity of the soil is taken, though the product is produced at the expense of the strength of the soil. In the former case a portion of the granted property is itself taken. This is in accord with the character of the grant, the use of the thing granted. The sum agreed to be paid is for the use of the land, upon and under the surface; and such use involves the taking away of the coal. This construction of such contracts is in harmony with their provisions, and in accord with usage touching such property; nor is it in contravention of the provision of the statute, but creates the relation of landlord and tenant within the statute, giving a landlord's lien for "rent."—Lacey vs. Newcomb, 63 Northwestern Reports, 704.

French Railways.—At the close of March, 1895, the length of railway in operation in France was 22,624⅝ miles, or 183⅜ miles more than the length of line in working at the close of March, 1894. The revenue collected upon all the French lines in the first three months of this year was $52,663,800, a decrease of $1,384,200, as compared with the corresponding period of 1895.

ABSTRACTS OF OFFICIAL REPORTS.

New Guston Company, Limited, Colorado.

The report of the directors of this company for the year ending December 31st, 1894, as presented at the recent annual meeting in London, shows that the total receipts from sales of ore and ore smelting for the year amounted to £34,921, and that miscellaneous receipts were £370, making a total of £35,291. Expenditure at the mine amounted to £26,048; the London office cost £2,179, and the taxes amounted to £270, making a total of £28,497, and leaving a balance of £6,794. To this is to be added £1,795 carried over from the previous year, making a total of £8,589. This balance was disposed of as follows: Written off from capital account for depreciation, etc., £2,000; carried to reserve account, £6,000; balance brought forward to current year's account, £589.

The ore raised and sold to various smelters amounted to 13,334 tons, which realized an average of $12.56 per ton. The average mine cost was $9.36 per ton. In 1893 there were 7,280 tons raised of an average value of $18.12 per ton, the cost being $17.08 per ton. The year 1894, therefore, showed a large increase in the amount of ore raised accompanied by a considerable decrease in the mining cost.

The directors' report says: "The results of the first smelting season, ending February 5th last, which necessarily had to be looked upon in the nature of an experiment, proved that the process of concentrating and matting the ore by the Austin method is entirely successful. A certain portion of silicious ore has to be purchased for the ready and cheap fluxing of the Guston ore, and as some of the most desirable silicious ores in the market are rich in gold, and therefore of corresponding value, an extra amount of capital became necessary for effecting their purchase. The capital of the Silverton Smelting and Mining Company was increased, April, 1895, to $120,000, and the contribution of this company raised, in round figures, from £4,000 to £10,000. The additional £6,000 has been provided out of the proceeds of ore sold to the Silverton Smelting and Mining Company during the fall of last year, and scrip in the Silverton Smelting and Mining Company for $30,000 has been handed to this company.

"During Mr. F. P. Crowther's visit to Colorado he succeeded in making very satisfactory contracts for the smelting of our first and second-class ores, the terms of which show an important saving in cost of reduction over past years. Mr. Crowther is of opinion that the Silverton smelter, apart from the special advantages it confers upon us in the cheaper reduction and utilization of our low grade ore, will return to the company a very satisfactory rate of profit on the outlay.

"With the satisfactory and regular working of the Silverton smelter, and the knowledge that the mines are in a condition to supply the smelters with a large tonnage of ore, the directors hope that sufficient profits will be made to enable them to resume payments of dividends within a reasonable period."

The report of Superintendent James K. Harvey shows the amount of prospecting done, which included the sinking of the main shaft 102 ft. with a considerable amount of crosscutting and drifting. The volume of water pumped out of the mine is increasing and is now about 100 gallons per minute. The water is strongly impregnated with sulphuric acid, necessitating great care and attention to protect the pumps and the column. The report further says: "In consequence of the severe winters we are subject to at this altitude, the Silverton Railroad being closed over three months out of the year, it seriously tells against the capabilities or tonnage output of the mine. Under more favorable climatic conditions our annual output of ore would be materially increased. We have greatly suffered, in common with other silver mines, through the unprecedented fall in the market value for silver. During the year there has been built up an ore reserve of about 25,000 tons, not including the ground open between the 11th and 12th levels. There is also every probability of this amount being added to. The ore in reserve, although not of the value of that extracted in former years, will leave a fair margin of profit, as may be seen by the values given in this report. Underground our work is in a forward state for the speedy and economical extraction of ore. At the surface every effort is made to handle the ore as rapidly and cheaply as possible. We can now deliver ore from the shaft mouth into the railway cars for 7c. per ton."

American Belle Mines, Limited, Colorado.

The report of the directors at the annual meeting held recently in London shows that the total receipts for the year were from sales of ore £4,711; from interest, transfers, fees, etc., £190, making a total of £4,901. Expenses at the mines were £5,603; general expenses and London office, £1 545, making a total of £7,148, and showing a deficit of £2,247 for the year. No particulars are given in the report as to the amount of ore raised or the cost.

The report of Mr. James K. Harvey, superintendent, after giving the amount of the prospecting done in the mine during the year, says: "At the Hudson and Silver Bell mines no work has been done during the past 12 months, owing to the extraordinary decline in the market value for silver. At the National Belle mine during the year operations have been conducted principally at the south and north ore bodies at Nos. 2, 3 and 4 levels. At No. 3 level on the south ore body, the raise having been holed to the winze sunk from No. 2 level; it should open up a fair piece of stoping ground. In the stope over this winze we have good shipping ore, and seeing there is whole ground for a height of 176 ft. over this stope, I look for a continued improvement and a valuable piece of stoping ground. At the north ore body on No 2 level, and at the North Day tunnel, the stopes in operation maintained their size and value, the ore shipped during the year having been largely extracted from these points. At No. 4 level considerable work has been done in prospecting for the north ore body. Ore has been met with here, but not sufficient in quantity or value to enable us to ship with profit. The ore encountered has not formed itself into a compact body of the nature and value of that met with in the upper levels, and we are satisfied we have not yet discovered the main ore body at this level. We purpose opening in at another point where there are favorable indications for ore, and if satisfactory results are not obtained, to sink in the ore from No. 3 level, and follow it down, thereby proving the ore body as we sink, and at the same time being absolutely certain of its position at No. 4 level. Looking at the massive outcropping surrounding our surface works, and the size and strength of the North ore body in the upper levels, I see no reason why quantities of ore of a profitable nature should not be discovered by sinking. The future of the mine depends on the discovery of valuable ore at greater depths, and in my opinion the prospects for making such discovery are exceedingly good."

With regard to the future of the mines, Mr. F. P. Crowther, in connection with the superintendent, made a careful examination of the National Belle, the principal property of the company, and submitted the following conclusions: 1. That the main ore body has not yet been discovered in No. 4 level. That efforts should be made to pick it up; if not found within a reasonable time stop drifting and sink on the ore from No. 3 level, so as to obtain data as to which direction it has trended in depth.

"2. When the North ore body is found in No. 4 level, proceed with the sinking of the shaft, and also sink a winze on the ore as quickly as possible below No. 4 level, with a view of avoiding unnecessary drifting in No. 5 level; pursue this policy until the 7th level at least is reached—by so doing there is an excellent chance of opening up a good mine. To obtain the money for this work, we have from 2,000 to 3,000 tons of good copper ore in the top of No. 2 stope; as soon as possible extract this ore under contract. We think it can be put into railroad cars for $2.50 per ton, and shipped to Durango for $3 per ton; shortly we expect to get a cheap treatment for it, in which case it would realize a substantial sum which would be available for the development work suggested. The ore in No. 3 stope is too poor at present to ship, but I feel pretty certain, by upraising on the ore body, we shall soon find better ore that will pay to ship, seeing that both copper and silver are showing an advancing tendency. Then I would sell the $19,500 worth of stock in the smelter. The earnings we shall soon be showing at the smelter will help such sale, and the proceeds can be devoted to the future development of the mine. These funds wisely and economically spent will be sufficient to carry out my plan to prove the mine in depth."

THE ELECTIVE SYSTEM AS ADOPTED IN THE MICHIGAN MINING SCHOOL.

By M. E. Wadsworth, Director.

In this country two systems have been chiefly followed in the higher educational institutions—the Fixed and the Elective. The latter was introduced first in this country by President Wayland, of Brown University, and it has since been systematized and developed with remarkable skill and success by President Eliot, of Harvard. Indeed the system has proved to be so well adapted to the needs of modern times and to be so popular that it has made its way in the face of strenuous opposition, until all or nearly all our colleges and universities have employed it for their work in general or literary and scientific education.

In technical or engineering education the case has been different, since even those schools, like Harvard, Stanford or the University of Michigan, which have a most liberal elective system for general education have still only a partially modified form of the rigid system in the engineering or technical courses. The rigid system is disguised in most institutions in their technical work under the head of election between various fixed courses, which may or may not have a few options, or it masquerades under an elective dress to which it has but little if any right.

The elective system proper in any of the higher institutions in giving general education has consisted of two features: 1st, The Essential Studies. 2d, The Sequence of Studies. The first is composed of those studies which are considered in each institution as necessary or essential to maintain the scholarship or traditions of the school in question, and in engineering schools, not even excepting that at Harvard, the required or essential studies to-day constitute the chief amount of the entire course in any of the engineering branches. In the case of general or literary education, the number of studies that are considered essential usually rapidly diminishes according to the experience and number of the faculty until only a few studies are required; and in time this feature will be fully eliminated.

Regarding the second, or "The Sequence of Studies," but little public attention is called to it in any statements relating to electives in any institution, although it is the keynote of them all. No school can maintain any elective system or any work above a kindergarten or primary grade, without carefully considering the question of the natural sequences. It is the unwritten law that no student can take calculus who has not previously prepared himself in algebra, nor can he study petrography without any knowledge of mineralogy.

All the catalogues of the advanced schools show that they tacitly recognize the law of sequence of studies with greater or less fullness, but I do not know of any which call attention to the fact, except the recent prospectus of the Michigan Mining School.

In truth, the greatest curses that beset any system of electives are the neglect of proper sequences in the studies and the tendency of various instructors to bid for students by giving weak and inferior (technically known as soft) courses. This last, like many of the other ills of educational institutions, can be partially, if not entirely, removed, by placing the charge of the instruction under one experienced executive head, which head is to be held strictly accountable for the success of the work, and is to be given absolute control over all the instructors, with power to discharge them if they do not properly perform their functions. In other words, there should be introduced into our schools more of the business methods of successful business houses—the direct responsibility for and power of the individual over everything placed under his charge.

The Michigan Mining School has attempted to apply the methods in use in the elective systems employed for general or literary instruction to technical or engineering education, so far as the school's province of training men to assist in the development of the mineral wealth of the country will enable it to do. In accomplishing this it has tried to reduce to a minimum all studies to be taken by every student to conserve the sequence, and to obtain thorough work by the business method of individual responsibility.

The only studies required of all the pupils here are "elementary geology" and the "elementary principles of mining"—these are asked for because it is believed that in any institution dealing with the problems relating to the mineral wealth, the public should have some knowledge

of geology and of mining methods, and also because the director (who in this case happens to be in charge of the geological instruction) desires to come into personal contact with every pupil in the school, early in his course. The above-mentioned studies require, altogether, the pupil's presence in the class-room only three times a week for 34 weeks.

Outside of the elementary geology and mining the student is allowed unrestricted freedom of choice in his studies, the same as he is in the literary, but not in the engineering, work of Harvard, Michigan, or in any other of our universities.

Emphasis is here placed upon the almost absolute freedom of choice at the Mining School because many have mistaken the natural "sequence of studies" for "required studies." This error happens because in the prospectus of the elective system, issued last May, special attention was called to the natural sequences in chemistry, metallurgy, mechanical, electrical and mining engineering, ore-dressing and goelogy, provided any student wished to obtain every particle of instruction that is given in the Mining School in any of the subjects named. These outline schemes are merely signs showing the student some of the numerous ways of reaching the upper rooms of the house, but he has absolute freedom to use any of the other numerous ways that might just as well have been pointed out. Owing to the fact that in the usual discussions of elective systems the natural sequence of studies is not dwelt upon, it was expected that these guiding lines would be mistaken for required courses by many readers, although it was thought the error was sufficiently guarded against in the prospectus on pages 11, 13, 14 and 25. The precaution seems not to have been entirely successful, since a friendly hand in a friendly journal* has penned the following: "Students are allowed to select one of several courses with a certain principal subject, and in each course certain studies are required and the rest are elective. The school thus allows greater freedom in the selection of studies than do most mining schools." This friend has entirely misapprehended the facts, as the statements made above show. The freedom of choice is not only greater than that allowed in all other mining schools, but, so far as the present writer is aware, also greater than that in all other technical or engineering schools whatsoever.

Although this is the first time this general freedom has ever been allowed in any engineering school, the problem seemed to be so fully solved, so far as the special conditions of this institution are concerned, that when it was brought before the Faculty and the Board of Control it passed both bodies without a single objection. The ostensible working of the system does not go into full effect until September 16th of this year, yet the choice of electives has already been made, and the passage of all the students from a rigid system to an elective one has been accomplished without any hitch or difficulty, but also with the pupil's unanimous approval.

The courses in operation up to the time of commencement, August 16th of this year, are two exceedingly rigid ones. The required work demanded of the student from seven to ten hours a day, five days a week, for forty-five weeks a year, and for three or four years (according to which course was taken) in the class-room, laboratory, field, mine or mill, while his daily preparatory work had to be attended to in outside time. When it is considered that all students, both special and regular, have been transferred, not only without trouble, but with general satisfaction, from one system to the other, the success seems almost phenomenal.

In the elective system of the Michigan Mining School the unit of work is taken as three hours a week in the class-room, or nine hours a week in the laboratory, for 34 weeks, and this amount of work is called a course, or a full course, while any subject scheduled in the prospectus for less time is taken for its proportionate part of a full course. The student to obtain the degree of Bachelor of Science must complete 18 full courses, and to obtain that of Mining Engineer 22 full courses, which in both cases include the subjects of elementary geology and mining.

Owing to the fact that the regular work in the Michigan State Mining School extends through 45 weeks of the year a good student can obtain his degree in three or four years, depending upon the question of whether he remains during the entire 45 weeks each year, or for only the first 34 weeks, or, also, whether he wishes his course to be largely of practical or theoretical work.

At the present time this institution has announced 65 different subjects or studies from which the pupil can make up his 18 or 22 full courses, only one of these full courses being of required work. In a required system of study the pupil can be carried over all the subjects that experience considers necessary for the successful prosecution of his future profession, but this is always done at the expense of thoroughness, and it pays no, or but little, attention to the individuality of every student or to the rapidly increasing specialization of work in every subject. It gains breadth, but it is at the expense of depth.

In an elective system the individuality of the student, the specialization of work in modern times, and the limitations of human capacity are all considered. It loses in breath but it gains in the greater interest, and consequently greater depth of the work done.

Much can be said in favor of both systems, as the writer knows from long experience with both; but there is one point that ought to be the controlling factor in every engineering school in deciding what it will do for the future. It the signs of the times and the history of education are read aright, this is true and certain: that whether we like the elective principle or not, whether we are willing to adopt it or not, every engineering or technical school in the land must and will adopt it in its entirety, sooner or later, or else perish. It needs no Daniel to read the handwriting all over our walls.

* American Geologist, 1895, XVI., 139.

THE DEADWOOD PLACER CLAIMS, IDAHO.

Written for the Engineering and Mining Journal by Walter Hovey Hill.

The Deadwood placer mine is situated five miles south of the old camp of Elk City, Idaho, the center of Idaho County, 130 miles nearly east of Lewiston, where the Oregon Railway and Navigation Company has steamers running from the railroad at Riparia, Wash. Good wagon road connection over this distance from Lewiston render the trip not at all unpleasant, as the road passes through prosperous farming communities, the Nez Perces Indian Reservation, Camas Prairie and the Clearwater country. Thriving towns are along the line where good accommodations can be had for travelers.

BUILDING AND WATER ON DEADWOOD PROPERTY.

FLUME ON DEADWOOD PROPERTY.

The placer property which this description covers, is owned and worked by James Witt, an old time miner of this section, and one of the first miners to rush into Elk City in the early days, where he secured valuable property. The property has been one of much cost to the owner and considerable delays in opening caused by unforseen accidents happening by reason of reservoirs breaking, etc., but the unbounded confidence that Mr. Witt has had in his property has led him to continue on through difficulties, until now it is returning good interest on the investment, and from the prospects will continue to improve until the ground has all been worked.

The property lies in a long narrow gulch known as Deadwood which is 3 miles in length and averaging in width 200 ft.

The entire deposit contains approximately 460,000 cu. yds. of gravel that has pay in it. There are numerous small gulches putting into Deadwood, nearly all of which have been worked by ground sluicing, and all paid largely. The tailings from these old workings now cover the valley of Deadwood for a depth of several feet. In the early days when the work was done hastily much fine gold was lost, and as these tailings now show, they constitute very good pay in themselves. The virgin gravel deposit lies underneath these tailings and averages 8 ft. in depth. The gravel is small and well rounded. It contains no pipe clay, cement or large boulders that would in any way hinder its rapid working. The bed rock underlying the entire deposit, as gained from what has already been uncovered, and from prospect holes sunk to bed rock, is soft decomposed granite. The pay is confined principally to the last three feet of gravel,

and on the bed rock. There is a regularly defined pay streak that is from 70 to 150 ft. in width runs through the valley.

Old prospect holes sunk in the valley show very good prospects. Five cents on a shovel being a common occurrence. Gold is found in nuggets weighing several dollars very often in the diggings, and some of the gulches putting into Deadwood in this vicinity have produced large nuggets. The largest that is recorded being about $100, having been found by Chris Michaelson. The gold has an assay value of $17.50 per ounce.

Until a few years ago this valley of Deadwood has lain as a catch basin for all the debris from the gulches above, as well as for the original deposit of gold made during the glacial epoch, and on account of the expense of opening the ground it was not worked until Mr. Witt purchased it.

To properly open the deposit required a long and expensive bed rock flume, through hard rock and where there was but little pay to help the work along, but now this has been accomplished, and Mr. Witt feels that he is to be rewarded.

It only requires four men to work the property and the expenses are therefore small, so a good clean-up leaves a good margin of profit.

Water generally commences running in this district the latter part of April, while there is still some snow, as shown in the accompanying illustrations. These photographs were taken during the progress of the work through the hard bed rock in the canon for flume. Mining work is carried on oftentimes until November 15th. Snow comes early in the district, but seldom lies on the ground to hinder work until after November.

The writer has seen beautiful weather in January in this camp, with not enough snow to hinder regular mining.

The property is well equipped. About 2,700 ft. of bed rock flume has been put in affording dump.

The water rights are ample for mining all the season, and Mr. Witt is making certain ditch extensions, etc., that will afford him better service, not only in pressure but in volume, and can do better work next season than ever before. Good buildings for men, blacksmith shop, etc., are on the property.

Electric Railways in Russia.—The members of the Special Committee sent by the Czar to England, France, Germany and Switzerland to study the working of electric railways and the latest improvements in electric transit, have returned to Russia, and submitted their report. The Czar endorsed it with his own hand in these terms: "Very interesting and desirable to be introduced in Russia, taking the English railways as models."

Coal in France.—The extraction of coal in the French department of the Pas-de-Calais in the first half of this year was 5,314,647 tons, as compared with 5,331,534 tons in the corresponding period of 1894. The extraction effected in the department of the Nord in the first half of this year was 2,451,746 tons, as compared with 2,469,037 tons in the corresponding period of 1894. The combined output of the two departments in the first half of this year accordingly amounted to 7,766,393 tons, as compared with 7,800,571 tons in the corresponding period of 1894, showing a decrease of 34,178 tons this year. The largest production was, as usual, from the Anzin mines.

Mineral Traffic on British Railroads.—The British Board of Trade returns for 1894, recently issued, shows that during the year the total quantity of minerals carried by the railway companies of the United Kingdom in 1894 was 234,313,000 tons, of which 202,018,000 tons were carried on the English railways. The total quantity of general merchandise carried in the same year was 90,103,000 tons. The total gross receipts from mineral traffic amounted to £18,116,000, which compares favorably with the receipts from this source in previous years. When we look at the average income per mineral-train mile, and per ton of minerals carried, says the London "Iron and Coal Trades Review," we do not seem to find that serious disturbance of mineral traffic which was predicted by the companies some years ago, when the companies were settling the mineral schedules, and did, indeed, settle them, much to the disadvantage of the traders. In short, it appears to us that the mineral trades, in their present seriously depressed and exhausted condition, have every right to look to the railway companies for a much larger degree of consideration than they have hitherto received. The figures show that the mineral trades supply the railways with a larger share of their gross resources than any other.

PATENTS RELATING TO MINING AND METALLURGY.

United States.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

TUESDAY, AUGUST 27TH, 1895.

545,048. Carburetor. Charles Brunner, Peru, Ill. A closed tank with a pipe and overflow opening near its bottom, a lateral opening with a tubular projection in the upper section, and a longitudinal header pipe with a number of depending pipes extending at full length in the upper portion of the tank.

545,057, 545,058, 545,120, 545,121. Mechanical Drier. Franklin D. Cummer, Cleveland, O., assignor to Eliza E Cummer, same place. A drying cylinder provided with a spider in the induction end, the former having an annular inclined flange at its outer edge, and a breeching through which the material is fed to the cylinder.

545,067. Apparatus for Drawing Ribbed Tubes. Oscar Friedrich and Wilhelm Schulte, Duisburg, Germany, assignors to Duisburger Eisen-und-Stahlwerke, same place. Combination of a draw-bench having a fixed mandrel, a fixed draw-plate, and a traveling carriage.

545,072. Packing for Oil or Gas Wells. Benjamin C. Hadden, Watson Farm, Pa. Combination of upper and lower enlarged pipe sections, one of which has a tapered end, an elastic packing arranged between the pipe sections, a tube extending through the packing and into angular recesses in the enlarged pipe sections, both of which are free to slide on the tube, and detachable nuts on the ends of this tube.

545,076. Gold Sluice Box. Charles R. Spicer and John B. Wilson, Helena, Mont. Consists of a sluiceway with a removable sectional riffle, a screen placed over this riffle and securing it in position, the screen consisting of longitudinal bars secured to cross-bars, means for securing the screen in place, an under passage having an amalgam plate in it.

545,109. Rock Drill. Imle E. Storey, Boulder, Colo, assignor to the Storey Electric Drill and Power Company, of Colorado. Combination of a motor, a drill-rod, a forwardly extended housing-frame through which the drill-rod passes and upon which the drill rests when in operation, a handle attached to the drill-rod by which it may be manually fed forward or withdrawn, and a back stop for the drill-rod.

545,123. Valve for Compressors. Charles Dickerman, Philadelphia, Pa., assignor to the Pennsylvania Iron Works Company, same place. A valve-cage provided with a tubular guide and a hollow cylindrical extension, both of which are detachably connected thereto and the latter providvd with an opening in its outer end, in combination with a valve seated in the cage and having a collar or the stem thereof, a spring resting upon the collar and the outer end of the valve stem engaging the opening in the outer end of the cylindrical extension.

545,168. Mining Machine. Jonas L. Mitchell, Chicago, Ill., assignor to the Sullivan Machinery Company, same place and Claremont, N. H. Combination of a cutting mechanism extending out at the side of the machine, an anchoring post in front of the same, and a frame extending out at the rear of the machine and carrying guiding mechanism engaging with the minor floor to guide the movement of the machine.

545,188. Drop-Hammer. Frederic C. Billings and Frank Lombard, Hartford, Conn., assignors to the Billings & Spencer Company, same place. Combination of a frame, a reciprocating hammer, lifting rolls, an actuating rod and a speed-reducing device connected to the actuating rod, and having one end fulcrumed to the frame, and its other end in the path of movement of the hammer, so that it will be operated by the hammer at a predetermined point in the ascending movement.

545,201. Device for Lowering and Delivering Coal. Lyman D. Howard, Columbus, O., assignor to Joseph A. Jeffrey, same place. Combination of an upper supporting frame, a delivery duct formed of a series of duplicate conical downwardly narrowing sections, the upper section supported from the frame, one or more ropes extending downward to the bottom section and adapted to elevate the sections below the upper one, a guide or brace for preventing lateral movement of the sections, and stops for preventing the sections from escaping respectively one from the other.

545,205. Process of Separating Gold. Henry W. Kelly, Chicago, Ill. Consists in mixing pulverized ore with bone-dust or its equivalent, then adding water in excess of the bulk of the mixture, then agitating the same for from six to eight hours, then letting the mixture stand until settled, and finally eliminating the ore at the bottom of the mass.

545,245. Ingot Tilter. George W. McClure, Pittsburg, Pa. A table comprising driven feed-rollers, a tilting holder pivoted adjacent thereto, and arranged to receive and hold the ingot in an upright position and a motive cylinder situated under the table and connected with the tilting holder.

545,258. Seperator. Thomas Walker and John F. Carter, Philadelphia, Pa., assignors to John A. Barham and Joseph A. Vincent, same place. Combination of a tank, pockets in the tank containing amalgam, circulating blades elevated above the bottom of the tank by which motion is given to the material under treatment, with horizontally pivoted blades mounted on the body of the tank so that they can be adjusted to direct the material toward the pockets.

545,328. Process of and Apparatus for Refining Metals Electrolytically. William H. Wiggin, Worcester, Mass. Consists in suspending plates of the impure metal in a vertical position in an electrolyte, dissolving pure metal from the anode side of one plate and depositing it upon the cathode side of the next plate by electrolytic action and maintaining the surfaces of the plates free from bubbles of gas or impurities by constantly agitating the plates in vertical planes.

545,335. Hand-Drill. Robert Binnie, Bolivar, Pa. Combination of a frame and carriage, a drill-shaft mounted in the carriage, a sliding frame secured to the drill shaft and provided with wheels, a driving shaft, cams on the driving shaft and engaging the wheels of the sliding frame, a worm on the driving shaft, and a worm wheel in which the drill shaft slides, the shaft having a key and groove connection with the worm wheel.

545,404. Electrically Operated Mine Car. Henry B. Dierdorff, Columbus Ohio. Combination of a body supported upon the track wheels and constructed of metal throughout in several parts separable on central vertical planes of division, and adapted to be bolted together.

545,433. Ore Car. George E. Truax, Denver, Colo. Combination of a car-body and a door, a metal strap applied transversely to the top of the door and having rearward projections embracing the outer surface of the car sides, and suitable hinge-pins engaging the projections.

Great Britain.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy:

WEEK ENDING JULY 20TH, 1895.

11,986 of 1894. T. Woods, and J. Atherton, St. Helens. In miner's safety lamps, a frictional igniting apparatus, to obviate the opening of lamps for relighting.

14,481 of 1894. A. Mieg, Heidelberg, Germany. Making tungsten articles, by embedding powdered tungsten in a matrix of more fusible metal.

15,419 of 1894. W. K. Birkenshaw, Derby. Tool for holding removable points of picks while welding on.

17,820 of 1894. O. Nicolai, Wiesbaden, Germany. Solder for aluminum, consisting of zinc or cadmium halogen salt mixed with sodium chloride.

23,756 of 1894. Gates & Carmen, Chicago, U. S. A. Improvement in jaw crushers combining the characteristics of the Blake and Dodge types.

4,516 of 1895. A. F. & A. G. Beyer, Paris, France. Machinery for classifying phosphates; improvement on the No. 3,678 of 1894.

9,072 of 1895. E. E. Lungwitz, Brooklyn, N. Y., U. S. A. Preventing volatilization in smelting furnaces by increasing the atmospheric pressure.

WEEK ENDING JULY 27TH.

12,637 of 1894. A. G. Davis, Middlesbrough, Ky., U. S. A. Improvements in the Davis Colby roasters.

12,934 of 1894. W. Seedhouse, R. Norbury and C. E. Trickett, Sheffield. A lock for securing removable points of picks.

16,583 of 1894. G. S. Waterfall & C. H. Woods, Sheffield. Coal boring machines worked by hand; improvements on the frame and in the nut of the main screw.

25,016 of 1894. M. Crawford, Colorado Springs, Colo., U. S. A. Providing the necessary oxygen to cyanide solutions by adding cyanate of potassium.

8,536 of 1895. E. D. Kendall, New York, U. S. A. Precipitating gold and silver from solutions by means of pulverulent zinc amalgam.

WEEK ENDING AUGUST 3D.

14,327 of 1894. A. F. B. Gomess, London. Using tartrate of aluminum bath for electro-deposition of aluminum; improvement on No. 7,205 of 1894.

15,293 of 1894. D. Davy, Sheffield. Coal screens; arrangement of shaking bars in groups so that the coal is made to pursue a serpentine course over the screens.

15,987 of 1894. L. F. Gowans, Johannesburg, and E. G. Appleby, London. Machinery for filtering cyanide solutions.

11,478 of 1895. L. Pelatan, Paris, France, and F. Clerici, Milan, Italy. Electro-cyanide process; improvement on 1,514 of 1895.

WEEK ENDING AUGUST 10TH.

13,868 of 1894. H. C. Baker and R. Pearson, London. Recovering float gold by passing the water through a series of amalgamated plates in tanks.

14,867 of 1894. E. Williams, Castleford. Making ventilating door frameworks, and brattices more or less elastic so as to resist sudden shocks.

15,771 of 1894. C. Gautsch, Munich, Germany. Stopping the spread of explosions in mines by injecting flame-resisting powders.

17,659 of 1894. J. McCulloch, Wolverhampton. Improvements in rock drills.

17,974 of 1894. A. L. Grant and C. G. Richardson. Separating copper and nickel, by first producing finely powderod metal from matte and then dissolving in sulphuric acid.

4,899 of 1895. J. G. Murphy and R. W. F. Abbe, New York, U. S. A. Milling ores by blowing finely ground ore into an amalgamatory pan, together with water.

11,752 of 1895. E. Andreoli, London. In electrolytic deposition cells, using a small anode of peroxide of lead and a very large surface of cathode.

PERSONAL.

Mr. Frederick G. Corning, mining engineer of New York, has gone to Idaho on professional business.

Mr. T. A. Rickard, the well known mining engineer and metallurgist of Denver, Colorado, has gone to Montana on professional business.

Captain N P. Turner and H. B. Jeffrey, of London, Eng., prominent stockholders of the Montrose Placers, have gone on a visit to Ouray, Colo.

Charles Frederick Mattes, vice-president of the Lackawanna Iron and Steel Company, died at Scranton, Pa., on September 3d, aged 76 years.

Mr. Paul Johnson, formerly superintendent of the Ibex smelter, Millard County, Utah, has been appointed to a similar position with the Hall mines and smelter at Nelson, B. C.

Mr. F. W. Denton has been appointed associate professor of mining and metallurgy at the University of Minnesota, Minneapolis, Minn. He will have special charge of the mining engineering work.

Mr. William C. Benbow, formerly with the mining departments of the Thomson-Houston and General Electric Companies, has recently resigned to assume the management of the mine of the Cambridge & Guernsey Consolidated Fuel Company, at Cambridge, O.

Mr. Reuben Rickard, who will be remembered for his successful management of the Richmond Consolidated Mining Company at Eureka, Nevada, and who during recent years has retired from active mining business, has now resumed professional work and can be addressed at Berkeley, Cal.

Dr. Theodore B. Comstock, president of the University of Arizona and director of the School of Mines of Tucson, Ariz., has severed his connection with that institution. Under Dr. Comstock's able management the School of Mines has acquired an enviable reputation, and the University will find his place a hard one to fill.

SOCIETIES AND TECHNICAL SCHOOLS.

American Association for the Advancement of Science.—At the meeting of the association held at Springfield, Mass., on September 4th, it was unanimously voted to meet next year at Buffalo, beginning August 24th and continuing one week. These officers were chosen: President, Edward D. Cope, of Philadelphia; permanent secretary, F. W. Putnam, of Cambridge, Mass.; general secretary, Charles R. Barnes, of Madison, Wis.; secretary of the council, Asaph Hall, Jr., of Ann Arbor; treasurer, R. S. Woodward, of New York.

The State Geological Survey of New York has been busily at work this summer. Prof. Charles W. Comstock, one of the professors of engineering at Cornell University, who has done excellent work on the surveys in Colorado, is in charge of work on the upper Hudson district with numerous able assistants. Prof. C. Wellman Park, recently in charge of the Department of Physical Science at the Rensselaer Polytechnic Institute, has charge of the survey work in Franklin County, with a large corps of men engaged in making surveys of large tracts of State land on township 24, etc., near the Saranac Lakes. Mr. Monroe Warner, recently a United States Deputy Surveyor for South Dakota, is at work with a party in townships 1 and 2 of Totten & Crossfield's purchase in the county of Hamilton, near Scandaga Lake and Lake Pleasant. Mr. Solomon Lefevre, formerly an assistant on the New Jersey Geological Survey under Professor Cook, is in charge of surveys in the district of the Indian River and West Canada Creek, Vrooman's Patent, Herkimer County. Perhaps one of the most important results of the work accomplished of general interest will be some computations made by Prof. Olin H. Landreth, formerly of Vanderbilt University, Nashville, Tenn., now professor of mechanics and engineering at Union University.

INDUSTRIAL NOTES.

The Rich Patch Iron Company has blown in the Buena Vista furnace at Buena Vista, Va., which it recently leased.

The Carbon Steel Company, Pittsburg, has commenced work on the erection of 24 Duff patent water seal gas producers.

The Pittsburg Steel Casting Company, in Pittsburg, is constructing a new 20-ton open-hearth steel furnace. This will about double the present output.

A German works, the Bochum Union, has captured from English and Belgian competitors a contract for 12,000 tons of steel rails for the Transvaal railroads.

No. 1 furnace of the Cambria Iron Company, at Johnstown, Pa., which has been out of blast for some time, has been relined and is ready to go into operation.

The Pittsburg Iron and Steel Company has put one of its open-hearth steel furnaces and the large plate mill in operation. The works have been idle over two years.

The Bloomsburg Car Manufacturing Company, of Bloomsburg, Pa., has received an order for 200 coal cars for the Lehigh Coal and Navigation Company and another order for 100 coke cars for Frick & Co.

A new company is being organized in Pittsburg to take the rolling mills of the Oil Well Supply Company and to carry on the business of manufacturing iron and steel pipe. The plant is a large one and in good order.

A Cleveland syndicate has contracted with the Chicago Ship Building Company for the construction of a steel schooner of 6,000 tons burden, 365 ft. in length over all, 44 ft. beam, and 46 ft. depth of hold. It will cost $175,000.

The California Asphalt Company, of New York City, has been organized to manufacture and construct asphalt and other pavements, floorings, etc. Capital, $30,000; and directors: Chas. H. Lalor, James H. Covode and Eugene A. Philbin, of New York City.

The Johnson Company, of Lorain, O., has received the contract for steel rails for the Columbia & Maryland Electric Railway, which will extend from Washington to Baltimore. The contract calls for about 13,000 tons of steel rails, most of them of heavy section.

The Bethlehem Iron Company has been apprised by its representative in Russia of another successful test of armor plate of its manufacture. The test was at the proving grounds of the Russian government, at Acthol, and the metal was intended for two Russian warships.

G. W. Knopf, Pittsburg, has received a contract from the Franklin (Pa.) Steel Casting Company for the erection of its buildings, to be of steel and corrugated iron. There will be three buildings 45×170, 60×170 and 25×170 ft. in size. The plant will be equipped with modern machinery.

The Atlanta (Ind.) Steel and Tin Plate Company's plant is to be enlarged and the capacity doubled. Work on the extensions will be commenced at once, and it is expected to have the entire plant of 18 mills in operation by January. The capital of the company has been increased to $150,000.

There was chartered at Harrisburg, Pa., on September 4th the Acetylene Light, Heat and Power Company, of Philadelphia, with a capital of $1,000,000. This company will make and sell the products of calcium carbide. There are 34 stockholders in the corporation, all of them citizens of Philadelphia.

The board of officers of the Iron Moulders' Union of North America recently elected is composed of Martin Fox, president; J. F. Valentine, Thomas Wisdom, W. H. Kelly, vice-presidents; E. J. Denney, secretary; J. G. Weaver, assistant secretary; William Hanzel, treasurer; J. J. Scully, auditor; R. H. Metcalf, J. Campbell, R. F. Daly, J. P. Diamond, Patrick Costello, trustees.

The Lewisburg Nail works, at Lewisburg, Pa., were sold recently for $12,000 to L. O. Phillips, who represents a syndicate of Harrisburg capitalists. The establishment was built in 1884, and cost $61,000, part of that sum being contributed by puddlers of Milton. The plant was afterward sold for $20,000 to the bondholders. W. J. Frick, of Danville, ran the mill for a time. The mill will start in November.

A new explosive called chromite, first tried in Australia, has been patented and is now being introduced in this country. The advantages claimed for it are that it breaks more rock than the same quantity of dynamite; it does not freeze, because it contains no nitro-glycerine, and is free from danger in thawing; it is safer to handle than the ordinary kinds of blasting powder; it produces no poisonous fumes and causes no headache.

The Calumet Furnace Company, at Chicago, has organized and elected the following officers: W. B. Ridgley, president; C. F. Stuart, vice-president, and C. H. Wilcox, secretary and treasurer. The following board of directors was elected: W. B. Ridgeley, Springfield, Ill.; C. F. Stuart, Pittsburg, Pa.; C. H. Wilcox, Chicago; Major Collins, Brazil, Ind.; George M. Clark, Cincinnati, O. The furnace, which is at Cummings, South Chicago, will be blown in this week.

The Pottsville Iron and Steel Company's plant at Pottsville, Pa., resumed operations September 2d, after idleness of many months. The bloom and 23-in. beam mills started, and the 19 and 12 in. departments resumed a few days later. The receivers of the company have issued a circular letter to the creditors of the company, outlining a proposed plan of reorganization. A rule has also been granted by the Court empowering the receivers to make a loan of $50,000, which will place the company on a good financial basis and close the receivership.

Representatives of the 31 Indiana window glass manufacturing companies met in Muncie, Ind., on August 29th, and organized the Western Window Glass Manufacturers' Association, which is to combine to control the output of Indiana's window glass manufactures, estimated to have a yearly value of $8,500,000. The officers were elected as follows: President, J. G. Sayre, of Marion; vice-president, T. H. Johnson, of Dunkirk; secretary, L. S. Woodbridge, of Red Key; treasurer, S. B. Smith, Hartford City, and general salesman, Thomas F. Hart, Muncie. The office of the association will be in Muncie.

The Phosphor-Bronze Smelting Company, Limited, of Philadelphia, gives notice that it has purchased the processes and exclusive rights for the manufacture of "Delta" metal in the United States, and is now prepared to furnish the same in castings, stampings, forgings, bolts, rods, etc. This alloy is largely used in Europe and is claimed to be well adapted for many uses, such as propellers, blades and shafts, heavy and light gearing, drop forgings and stampings, valve-stems, screws, bolts and nuts; in short, for all purposes requiring exceptional strength and moderate cost. These alloys are not offered as a substitute for the company's well-known phosphor-bronze, but occupy a field distinctly their own, and by their manufacture we hope to widen the scope of our already established business in high-grade alloys.

The new aluminum plant of the Pittsburg Reduction Company at Niagara Falls started up August 28th in actual work. The plant consists of long lines of iron pots, 30 in all, lined with carbon, which are connected up "in series." The positive end of one pot is connected with the negative end of the next. The current is conducted by copper bars extending over each pot down through round copper rods to carbon anodes. The aluminum produced goes to the negative electrodes, which are the bottom of the pots in which the operation is conducted, and remains there in a molten mass. The aluminum is taken out of the pots either by tapping from a vent in the bottom of each pot or by taking out some of the carbon anodes and ladling the molten metal out into ingot molds. The pots are tapped every 24 hours. The current, as it comes from the dynamo of the Niagara Power Company, is received in a "step-down" transformer. Thence it is transferred to the rotary transformers, changing the alternating current of 116 volts to a direct current of 160 volts. The two dynamos now in position will probably be run alternately for periods of 72 hours. The dynamo is at present generating about 2,000 horse power, which is all demanded by the Reduction Company. The maximum capacity is supposed to be 5,000 horse power, but a preliminary test showed the dynamo capable of 5,400 horse power. This, however, is not greatly in excess of 5,000 when delivered. The dynamos are made of nickel steel and are 11½ ft. in diameter.

TRADE CATALOGUES.

The latest catalogue of Jenkins Brothers, of New York, is well illustrated and shows the manufactures of the firm, which consist of Globe valves of the Jenkins type, which have been approved by long use, of gage cocks, packing and pump valves, the Howland steam trap, the Clark damper regulator, with reducing valves, and other appliances for putting up pipe and pipe fittings. A flue scraper and the "Metropolitan" injector complete the list.

The latest circular of Messrs. Eimer & Amend, of New York, shows a great variety of assay apparatus, including balances, crucibles, muffles, assay furnaces of a number of different types, blowpipes, mortars and crushers. Among the new machinery for assayers may be mentioned a combined crusher and pulverizer intended to do the work of the breaker and mortar; a very efficient machine. The Clarkson rapid sampler is also a special feature of the circular.

"An Ideal Engine Room" is a little pamphlet describing the fine quarters provided for three engines recently erected in Boston by the Harrisburg Foundry and Machine Works, of Harrisburg, Pa. These engines are of the "Ideal" type, manufactured by these works, which is already well known in its different forms, and which has been much used for running dynamos, as well as for other purposes. An attractive feature of the pamphlet is the excellence of the illustrations, which are among the best of the kind which we have ever seen.

The latest catalogue issued by the Deane Steam Pump Company, of Holyoke, Mass., describes several types of its steam and power pumps for boiler feeding or heavy pressure, and for tank service or light pressure. The types described include steam and power pumps for heavy pressure, duplex pumps for boiler feed and for general service, triplex power pumps, steam pumps with automatic receivers, steam pumps with independent condensers, and several other patterns. The descriptions are condensed and six of different sizes and capacities manufactured are added.

"Facts Condensed" is the title of a little pamphlet issued by the Hicks Company, of New York, describing the Hicks compound cylinder gas and gasoline engine, for which many advantages are claimed over other types. The gas engine is just beginning to make its way in this country, and many new forms are being introduced. The claims of all of these should be considered by those who appreciate the advantages which this form of engine has over the steam engine for many purposes, and in many localities, and this catalogue may help them to a decision.

Simplicity, fuel economy, safety, and the quick production of dry steam are among the advantages claimed for the "Economy" water-tube boiler, and these claims are well set out in the handsome illustrated circular issued by the manufacturers, The Economy Water-Tube Boiler Company of New York.

The construction of the boiler and of its details are very completely shown and described so that an engineer can form his own judgment as to the excellence not only of the general design, but of the various details. The advantages of the water-tube boiler are too well known to require much comment, and the catalogue before us should be seen by those who intend to put in steam, using machinery or steam-producers.

Catalogue No. 7, "Milling Machinery," adapted to the milling and reduction of gold, silver and copper ores, issued by the Risdon Iron Works, of San Francisco, Cal., is a pamphlet of 130 pages, giving a great variety of information. It is the third edition of this company's issue, containing many additions to the previous numbers, and is very fully illustrated. Its pages show the great variety of machinery manufactured by the company, and they give descriptions of all the requisites for a gold mill, including rock-breakers, stamp mills and all appliances therefor, samplers, amalgamators, retorts and furnaces, concentrators and other machinery, including plant for the chlorination process. There can also be found illustrations and descriptions of machinery for treating silver ores, either by roasting and amalgamation or by other processes. Roasting furnaces of different types, such as the Bruckner, O'Harra, Howell-White and Stetefeldt, form a prominent feature of the catalogue. Arrastras and machinery for the patio process are also found, as well as smelting furnaces of different patterns for silver-lead ores and for copper ores. Among the other appliances made by the company, and included in this catalogue, are Knight water-wheels, Pelton wheels, mining cars and the Risdon pattern wire-rope tramway, while hydraulic giants also find a place. The catalogue is one which can be carefully consulted by miners and mining engineers.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling goods of any kind.

GENERAL MINING NEWS.

ALABAMA.

The Tennessee Coal, Iron and Railway Company reports that its mines at Pratt City produced 154,462 tons of coal last month and that its total output in its Alabama mines for August is 301,018 tons.

ARIZONA.

Cochise County.

Tombstone Mining and Milling Company.—The machinery for this company's cyanide mill is now on the way to the property, where preparation for its arrival has been made. The capacity of the machinery is 30 tons daily. The company has thousands of tons of second-class ore on its dumps which although not carrying sufficient mineral to warrant shipment would pay to treat with this cyanide process if successful, says the Tombstone "Epitaph."

CALIFORNIA.

Calaveras County.

(From Our Special Correspondent.)

Fellowcraft.—B. H. West & Co. have purchased this mine on the edge of the town of San Andreas. They intend to pump it out and commence work at once. Some very rich ore has been taken out.

(From an Occasional Correspondent.)

Calaveras.—This group of gold mines, situated on the west slope of Carson Hill, are about to change hands, the sale will be consummated and the property paid for, as soon as the deeds are returned from England, the property being held there principally. E. K. Stevenot, of Sonoma City, is the purchaser, and intends to start operations on these mines as soon as the sale is consummated. This group is the south extension of the well-known Chaparral Hill group, which is the extension south of the celebrated Utica mine at Angel's camp.

South Carolina.—This mine, situated on the Mother Lode, on the southeast slope of Carson Hill, south of Angel's camp, has been purchased by Mr. W. H. Martin, of San Francisco, who has made all preparations to start operations on the mine at once. The South Carolina produced a large amount of gold, when worked by Mexicans in early days.

Mariposa County.

(From Our Special Correspondent.)

Whitlock.—This mine, five miles north of Mariposa, now owned by the Sierra Buttes Company, has started up the new 20-stamp mill, with enough rich ore in sight to keep them busy for some time. The hoisting works has been completed. About 75 men are employed.

Mono County.

Following are extracts from the latest weekly official letters from the superintendents of the Bodie, Cal., mines:

Bodie.—East crosscut from north lateral drift, 200 level, was extended 12 ft.; face in porphyry. East crosscut from Gildea vein, 300 level, was extended 18 ft.; face in porphyry. South drift from west crosscut, 300 level, was extended 20 ft., with a formation of clay and quartz of about 6 in. wide in face.

Bulwer—North intermediate drift, 200 level, was extended 6 ft.; face in hard porphyry carrying small seams of gold and quartz. New No. 2 upraise was extended 12 ft.; face in quartz and porphyry. North drift from No. 6 was extended 8 ft.; formation porphyry. Extracted 10 tons of ore from stope from new No. 1, estimated at about $20 per ton.

Mono.—South drift from east crosscut, 400 level, was extended 13 ft. We have from 8 to 10 in. of low grade quartz in face.

Nevada County.

(From Our Special Correspondent.)

The plans for the new quartz mill that the Champion Mining Company of Nevada City, Cal., is about to erect, have been completed and the lumber ordered. Men have begun tearing down the old Wyoming mill and grading out for the new structure. The mill will have 40 stamps and will contain the best machinery throughout. The stamps will weigh 1,000 lbs. each and have a capacity for crushing 4 tons each every 24 hours. Water power will be used to drive the machinery, the mill site being so situated that a water pressure of 400 ft. can be obtained. The old mill has 30 stamps and the addition will make 70 stamps. In order to keep this number of stamps running will require the extraction of over 250 tons of quartz daily. Ore will be taken from the Champion, Wyoming and Merrifield mines, all belonging to the Champion Company.

Odin.—At this drift gravel mine, on the Blue Tent Road, an important strike has been made in the drift that is being made to reach an old ravine. The gravel is estimated to run about $10 to the car load. Crosscuts will be run as soon as the ravine is struck.

Siskiyou County.

A big mining ditch was recently completed on Horse creek, by the Bratt Mining Company. The water is brought a distance of 4½ miles, at a cost of $11,000. The pipe is laid, and the giant will be in operation by next week.

Sonoma County.

(From an Occasional Correspondent.)

The Asti Company, at Asti, Cal., has started to prospect for chrome iron on its land; 26 years ago, large shipments of chrome iron ore were made from that locality. Everything looks very favorable. The operations are superintended by Mr. E. K. Stevenot, of Sonoma City.

Tuolumne County.

(From Our Special Correspondent.)

Grant.—This mine, on Moccasin Creek, has two shafts, each down about 50 ft., and two tunnels have been run 80 and 110 ft., respectively. The ledge on which they are now drifting is about 25 ft. wide. The ore assays over $50 per ton.

Pino Blanco.—An action has been brought at San Francisco, by Henry W. Chase against J. L. Ross, P. P. Chamberlain and Annie Klein Rikert and Hayward & Lane for fulfillment of contract. It is asked that three of the defendants, J. L. Ross, P. P. Chamberlain and Annie Klein Rikert, shall be compelled to sell the Pino Blanco mine to Chase, and that the other defendants, Hayward and Lane, shall be adjudged to hold whatever right, title or interest they may have in the premises subject to the rights of the plaintiff. The basis of the suit is stated to be an agreement which the first three defendants, owners of the Pino Blanco, entered into to sell the mine to Chase. By its provisions the plaintiff was to deposit in escrow on April 11th last $12,500 in the First National Bank of this city, with a grant, bargain and sale deed of the property, executed by J. L. Ross, P. P. Chamberlain and Annie Klein Rikert, and a certified copy of the agreement between the parties, to be held there for such period as should be necessary to obtain a perfect title with a resurvey of the property, when the money in escrow was to be drawn down by Ross. A payment of $30,000 in gold was to be made by the purchaser 90 days after the first payment, when Chase was to receive the deed and execute to the vendors, that is to say, to the first three defendants, a first mortgage covering the entire property, and also two first mortgage notes for $42,500 and $40,000, due 6 and 12 months, respectively, from date and drawing interest at the rate of 8% per annum. Chase complains that while on the date designated he was willing and offered to fulfill all of the conditions of the contract, the sellers backed out. It would seem that Hayward and Lane bought into the Pino Blanco mine between the time of the making of the agreement between the other defendants and Chase, and the date on which he was to make his first payment, says the San Francisco "Chronicle," and that the vendors became convinced that the property was worth more than the price at which they had first consented to sell it.

Yuba County.

The Old Flag Mining Company has filed articles of incorporation at San Francisco for the purpose of operating mines in Yuba County. The capital stock is $500,000. D. E. Miles, Col. George Stone, R. C. Walrath, E. C. Godfrey and J. V. Hunter are the trustees.

COLORADO.

Mineral surveys approved by the United States surveyor general for Colorado during the week ending August 24th, 1895: Survey No. 9377, Leadville, Augora placer; 9608, Leadville, Sun Flower; 9611, Denver, Cliff; 9244, Pueblo, Gold Charm; 9401, Pueblo, Old Abe; 9590, Pueblo, M. C.; 9393, Leadville, Deer Foot; 9549, Pueblo, Lucky Boy's Friend; 9593 Pueblo, Sundown; 9523, Pueblo, Baby Mine; 9129, Leadville, Etta B.; 9575, Pueblo, Sounol; 9576, Pueblo, Triangle; 9405, Leadville, Nellie Fay; 9588, Pueblo, Garland. Amended Work (G. L. O.)—6378, Am., Gunnison, Iron placer; 2215, Am. Montrose, Little Candies; 8376, Pueblo, Constantine; 8956, Am. Pueblo, Magnolia; 735, Am. Leadville, McDermith placer. Affidavit of $500 expenditure issued—9396, Pueblo, Late Acquisition; 9578, Pueblo, Violet.

Clear Creek County.

The new shaft house on the Lily mine, Idaho Springs, has been completed, and the machinery is installed. In the bottom of the shaft there is 6 ft. of mineral, some smelting and the balance suitable for concentration. Mr. Mayer, of Chicago, Ill., is in charge of the mine, and proposes sinking the shaft to a greater depth, then drift and open up the property.

(From Our Special Correspondent.)

Crown Point.—It is reported that the State Mine Inspector has ordered the Crown Point closed down until more securely timbered. This the management deny. However, it is known that the mine is being timbered as fast as the men can do it.

Edgar Union.—The tunnel level, now in 800 ft., has a good body of mineral showing in the breast, all of which is pay. Development is also being pushed on the second and third levels, both of which are in 600 ft.

Harrison.—This group of 13 claims, located near Idaho Springs, has been sold to Denver parties, who propose organizing a company for pushing the development work. The purchase price is $30,000.

Newhouse Tunnel.—The mines on Seaton Mountain are already experiencing relief from water, and it is believed this is caused by the tunnel furnishing drainage. Although the management claims that the tunnel is not far enough along, yet it comes from a reliable source that the distance in is not many feet short of one mile. A number of lodes have been cut by the tunnel.

Nonpareil.—After lying idle for years, work is being resumed in the adit level, and 2 ft. of concentrating ore is being hauled to one of the mills for treatment. At the time it was last worked there were no mills suitable for concentration and the ore could not be worked at a profit. Now all this is changed, and with low treatment and freight charges the owners are enable to make a profit.

El Paso County—Cripple Creek District.

(From Our Special Correspondent.)

The option on the control of the Isabella stock has expired and Mr. J. J. Hagerman refuses to give an extension.

Mr. Hamilton Smith of the firm of Smith & DuCrane, London, has been in camp a week and intends to remain for several days; he has been through the principal mines, and the only drawback to the camp he says, is that the ores are too rich. Mr. Ross E. Brown, of San Francisco, is also here and contemplates a thorough inspection of the camp.

Anna Lee.—The shaft has been sunk 800 ft., and the vein or deposit is of the same character, size and value as in the upper levels. The 14th level is being stoped, and the crosscut is being driven to intersect the shoot at the 15th level; the length of the crosscut is anticipated to be 40 ft. A drift has been extended north 75 ft. from the 11th level on a vein which averages 4 ft. between fairly good walls, the assay value being $35. The Scranton shaft has been sunk 400 ft. The output from the Portland group of mines is a little over 200 tons a day.

Bogart and Sheriff.—These mines on Raven Hill are closed and bonded to Messrs. L. White and others. The Bogart shaft has been sunk to 135 ft. and sinking is being carried on vigorously on a well defined vein. One shaft in the Sheriff has been sunk 110 ft. on a vein 6 ft. wide, yielding low-grade mineral.

Elkton Mining Company.—The Elkton mine, on Raven Hill, gives employment to 75 men. The north drift at the 3d or 300 ft. level, has been driven 242 ft.; at this point the vein is 5 ft. wide and yields good ore. The richest telluride ore ever found in the mine is being taken from this drift. The south drift has been extended 225 ft., but the vein is not as rich as formerly. The 1st level on the Walter has been driven north of the north end line of the Catherine 400 ft., all of which has been in good mineral save one barren spot 42 ft. long. The vertical depth at the breast of the drift is 450 ft., which is being stoped underhand. The water is being easily handled.

Free Coinage.—This group of claims consisting of the Wilson, Bison, Rising Sun, Pueblo situated on Bull Hill, has been secured by Ex-Senator Tabor of Denver, under an option for $85,000. The deepest shaft on the properties is 185 ft. which was sunk on the Rising Sun claim, on what is known as the Pharmacist vein and from which about $10,000 worth of ore was sold. The Wilson claim is worked by three sets of lessees.

Gold Hill.—The mines on this hill keep improving, if the number of steam hoists that are almost daily being erected is a criterion. Seventeen steam hoists and 21 shafts worked with windlass provided with small shaft houses is a fairly good record for five

claims in less than six months. The deepest shaft is less than 200 ft. The hill again presents its usual activity, as all the lessees have returned to work, the seepage water having disappeared and the output will be increased materially.

Independence.—The shaft is now 470 ft. deep, and sinking will be carried on until the 600 ft. level is reached. The mine is being opened in good shape, and the stoping that has been carried on during the past six months has been practically nil. 4 men only 3½ days. This is unquestionably one of the richest gold mines in the world. The average grade during two recent months without any sorting was 20 and 22 oz.

Katherine.—This mine has resumed sinking below the 315 ft. level, and drifts are being extended both north and south from this the 3d level and show well. The output of ore as well as the grade gradually increases, and without any great effort on the part of the management.

Portland Mining Company.—The main shaft has been sunk 320 ft. vertically. This is intended to be the main shaft of the entire property, being about in the center of the shipping properties of this group.

Raven.—This property is improving with the depth. At the bottom of the winze 55 ft. below the lower tunnel, two drifts are being driven, yielding richer ore than ever before known or seen in the mine.

Garfield County.

Vulcan.—This coal mine, at New Castle, which had been practically closed down for the last 60 days, on August 28 put in a force of men.

Gilpin County.

A press despatch from Central City, Colo., says that water broke through the walls separating the abandoned workings of the Bob Tail Tunnel property and the Sleepy Hollow and Americus mines on August 29th, and caught 13 miners before they could be warned of their danger. How extensive the disaster is cannot be determined at this writing.

The Bob Tail Tunnel property was famous in the early days of Gilpin County for its yield of gold. Its shafts, drifts and chambers penetrate into the hills for miles. The property was closed down for years. About four years ago a Haverhill, Mass., company opened a portion of the property named the C. P. Fisk, out of which they have taken considerable money. This has encouraged others to lease portions of the property, and such were the Sleepy Hollow and the Americus. The new workings must have gone too close to the abandoned drifts, filled with water, and the walls broke, engulfing the new workings. The break occurred at the Mabee workings, now idle.

Hinsdale County.

Mayflower.—According to the Lake City papers the Mayflower mine on Hotchkiss mountain, located 20 years ago, the property of Thomas L. Beam, was reported "jumped" on August 26th. The reports arise out of the locating and surveying of a new claim called the Key Note, which covers the old Argos ground and quite a good portion of the Mayflower, which is an extension of the Contention. The Mayflower has a record as a producer of high grade silver bearing gray copper. Most of its workings are included in the Key Note lode. The locators of the latter justify their action in an alleged error in recording. The recorded location notice described one-half of the boundary lines and then followed back right on the same lines to the place of beginning. No territory was inclosed. This it is claimed, left the ground open for relocation. The defect was only recently discovered. A right of way had just been granted by Bean to C. B. Blitzke & Co., who are working the Contention. A strike of rich ore was made a few days ago in the Contention through the Mayflower workings. Blitzke was notified to-day to cease operating by the owners of Key Note. The latter say it is to protect their rights and they will permit Blitzke to resume soon. More complications may arise. The Mayflower is one mile north of the Golden Fleece.

Lake County—Leadville.

(From Our Special Correspondent.)

Arena Mining Company.—The Iszard and Little Ellen properties are being developed. In one of the Iszard drifts a body of ore has just been encountered, assaying 20% lead, 12 oz. silver and ¾ oz. gold.

Bison.—While the lead ore bodies are being held in reserve, the iron bodies are being developed and shipments have been increased from 90 to 160 tons daily.

Eclipse.—J. I. Weed, of Denver, has started up this mine, which had been idle for a long time. A fine plant of machinery has been placed in position, and the shaft is being sunk to cut the Modoc and Little Ellen ore chutes.

Leadville District.—A great deal of new work is being carried on and the output is increasing. This increase, however, is due to the demand by the smelters for first-class iron ore. A number of new iron leases have started up.

Resurrection Mining Company.—This company is working ground covering nearly 70 acres. The new shaft going down has recently penetrated a very good ore body, which is reported to be the same body that was worked so successfully by the New Year's people.

Revenue Cutter.—This property was recently sold to an Engliah syndicate, and, although idle at present, it is reported that it will be thoroughly developed in the near future by the new owners.

Searl Placer Ground.—Since last week injunctions from the Mudd-Estey people and the Carleton-Nicholson forces stopped work entirely on the Acme shaft. However the former force is sinking the Delante shafts, while Carleton & Nicholson have started a new shaft just west of the one they were enjoined from working. Five shafts are now in this race for mineral. They are Delante Nos. 1 and 2, owned by Mudd & Estey; the Curtis, owned by Carleton; the Villa, owned by Mayor Nicholson and Carleton, and the Newell, owned by J. W. Newell. It is evident that these gentlemen are after a known ore body, hence the big fight over the ground.

Stewart Group.—This group lies on Empire Hill, and is operated by S. M. Myrick, who is sinking a new shaft and at a depth of 20 ft. from the surface has opened up a 1-ft. vein, assays from which run a trace of gold, 60% lead and several hundred ounces silver.

Turbot.—This is a new property in the city limits. The diamond drill explorations were followed by sinking and drifting and in the 380-ft. level a body of ore 12 ft. wide has been opened up. It assays 45% lead, 18 oz. silver and ¼ oz. in gold.

Ouray County.

(From Our Special Correspondent.)

Shipments will commence this week from the New Briton and Good Hope, on Hayden, which is under lease to several parties of Ouray.

Bachelor.—Nothing of interest has lately transpired in the contemplated sale of the Bachelor.

Caroline Mining Company.—At the Revenue tunnel a large number of improvements are being made, including the addition of a large stamp mill and other machinery for treating their ores.

Carribean and Montezuma.—A new mill of large capacity is to be erected at this point at once, and operations at the mine will be carried on in a small way pending the completion of the plant. The mill will use the Crooke process.

San Juan Chief.—The mill at this point is handling 30 tons daily of ore, with satisfactory results.

Park County.

The Gold Star, which lies just north of the Castle Rock group, Park County, has for many years been a shipper of high grade ore, but has been worked only a few weeks each summer. The owners, Messrs. Trave & Gumaer, have decided to do some extensive developement work within a short time. A large porphyry dike cuts the claim from end to end and 5 separate veins run along the entire length. A cross-cut tunnel is to be run intersecting all the veins at a considerable depth, and draining the entire property.

IDAHO.

Idaho County.

(From Our Special Correspondent.)

Several large deals have been made on the Meadows with Colorado parties from Denver, Colo.

The Relief Mine has been bonded for sale to W M. Ruggles, of Wisconsin, who will immediately put in a steam hoist, pump, etc., and work the mine to best advantage.

Elk City.—Contracts for the erection of the 10-stamp mill building for the Cleveland mine at Relief Creek, have been let to Campbell & Vansise, of Grangeville, who have commenced work.

Florence.—F. J. Boyer, of Walla Walla, will erect a small mill with which to prospect the ores of Florence and do custom work. Some very rich free milling rock has been struck in the Blossom mine.

Warren.—The frame-work for the excavator of the Warren Placer Mining Company is completed, and the machinery is being placed in position. W. O. Taylor is superintendent and H. T. King is in charge of construction for the Marion Works.

Shoshone County.

Consolidated Tiger & Poorman Mining Company.—This company has filed articles of incorporation in Idaho, where the mines are located, and in Washington, where the business office will be. The company's object, as stated in the articles, aside from the business that has hitherto been carried on by the two companies, is "more particularly to buy, operate and mine the Tiger and Poorman mines, mills and all appurtenances thereunto belonging or therewith connected, situated at the town of Burke, in the Le Lande mining district, Shoshone County, Idaho." The capital stock of the new company is $1,000,000, divided into 1,000,000 shares, 500,000 shares going to the stockholders of the Poorman and 500,000 to S. S. Glidden, the present owner of the Tiger. Every stockholder in the old company will receive share for share of the new stock in exchange for the old. The Tiger was never capitalized. The affairs of the consolidated mines will be managed by a board of five trustees, and the board named to manage the concern for the first six months are S. S Glidden, Spokane; F. R. Culbertson, the present manager of the Tiger, Burke, and Patrick Clark, B. C. Kingsbury and E. D. Olmstead, all of Spokane, Wash. Both mines are well-known producers of silver-lead ores in the Cœur d'Alene region.

ILLINOIS.

Christian County.

Pana.—The old shaft of the Pana coal mine took fire on September 2d. All the miners escaped. The shaft of the burning mine is 700 ft. deep, and this, with the great amount of smoke and gas, made it impossible for the workmen to get at the fire for some time. The fire was under control on the next day.

Marshall County.

Devlin Coal Company.—This company, at Toluca, closed a contract on August 31st for 100 new houses, to be erected immediately. One thousand miners are at work in No. 1 shaft. No. 2 shaft has just been opened, and a large force of men will be employed.

INDIAN TERRITORY.

The mining and railway property of the Cavanal Coal & Railway Company, of Poteau, was sold on August 27th by order of Judge Stuart to C. H. Alexander, of Dallas, Tex. The price was $50,000.

LOUISIANA.

Iberia Parish.

New Iberia Salt Company.—The suit of Dudley Avery et al. against the New Iberia Salt Company et al., involving the cancellation of the lease of the salt mine properties in Iberia Parish and for damages, has been, upon application of the defendant company, removed from the district court at New Iberia to the Circuit Court of the United States, at New Orleans.

MICHIGAN.

Copper.

Calumet & Hecla Mining Company.—The directors met in Boston, September 3d, and declared a dividend of $5 per share, payable October 18th to stockholders of record October 1st. The last previous dividend was paid August 19th, and the declaration of this one comes as a surprise to stockholders that had not been anticipated. Last year no dividend was paid between August and December. This latest distribution will make $43,850,000 paid out in the aggregate by the company in dividends.

Three furnaces in the Calumet & Hecla smelter at Lake Linden have been fired up and will begin smelting mineral at once.

Quincy Mining Company.—The output of the Quincy mine for August was 850 tons 605 lbs., against 850 tons 450 lbs. for July; 800½ tons for August, 1894, and 724 tons for August, 1893.

Iron.

Militia have been sent to Ishpeming to prevent attacks upon the mining properties by the striking miners. Four steam shovels were started on September 2d, at the Lake Superior and Lake Angeline mines without interference by strikers.

MINNESOTA.

Duluth.

(From Our Special Correspondent.)

Ore shippers are worrying not a little over the rapid advance in lake freights. This increase in ore rates means that the mine owners either make nothing or lose money, because the sales were made early in the season at low prices, nobody anticipating that there would be such a boom in iron or freights. And where it is not obligatory to ship there is a probability that the advance in prices will cause a diminution of shipments. At present, however, it is as lively as it can be. Wheat is chartered at Duluth at 3½c., which is equal to $1.25 for ore to Lake Erie. No ore has been chartered at more than $1.05, but may soon go up.

Shipments from Duluth and Two Harbors for the month just past have been about 800,000 tons of ore, the latter place leading.

The Duluth, Missabe & Northern road will build a second ore dock at Duluth, and will connect its tracks with the terminal lines, so that ore can be delivered at the local furnace, which is to start up soon if arrangements can be completed. The dock will be 56'8 ft. to the floor, and will have six tracks. It will be 1,200 ft. long and will have capacity for about 45,000 tons. The cost of the work will be $290,000. The Duluth & Iron Range road has made no announcement of new dockage, but will probably extend dock No. 3 500 ft., and will erect all or a large part of No. 5. The two companies will add about a mile to the ore dock frontage at the head of the lake this season.

A queer state of affairs has been brought about by the boom in the iron trade. The syndicate that has a customer for all the pig iron that the West Duluth blast furnace can turn out in the coming year cannot get any mine to furnish enough Bessemer ore as all the Bessemer mines on the Minnesota ranges are crowded to their utmost to fill the orders they already have. It is necessary that the syndicate get the ore right away, so that it can have the benefit of water transportation rates for a few weeks at least.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Biwabik.—This mine has 300 men at work on the stripping contracts taken lately by the Drake & Stratton Company of Pittsburg. A fourth shovel will be added, and 100 more men put to work.

Franklin.—This company has shipped over 100,000 tons and will make an output for the season of almost 300,000 tons. The new machinery going in here will consist of two duplex hoists, geared to two 5-ft. drums, to work either in balance or separately.

Lake Superior.—This company will open three mines west and south of No. 1 this winter, and will

be prepared for shipping 500,000 tons in 1896. Its output for the present season will be about 100,000 tons. Heavy machinery has been ordered for No. 1 and for the new shafts. About 1,000 tons a day is now being loaded.

Mountain Iron.—This company has started a second shovel, and is employing more men than since early spring. The stripping shovel is widening the stripped area to the west of the mine.

Ohio.—This company has begun active shipping, and will send out 100,000 tons if cars can be had.

Oliver.—August shipments from this mine will aggregate 100,000 tons, but where all last year was from the State's land, this season not a ton comes from the State lease, but all from the 25c. lease of the Consolidated. The Sheridan, lately bought by this company, will be opened at once for extensive shipping. It is an open-cut mine, and will be stripped for steam shovel mining this winter.

Sellers.—This mine is increasing its facilities for raising ore, and is now loading 40 cars daily. It will be vigorously pushed during the coming winter.

Victoria.—This company, which has never shipped any ore and has done no development, is now at work on a shaft, and will be in ore this fall. It is intended to ship largely next season, and it is probable that a large stockpile will have been begun before winter. Corrigan, McKinney & Co. control this property. This firm is now opening four mines on the Mesabi, where a month ago they had nothing under way on the range.

Iron-Vermilion Range.

(From our Special Correspondent.)

The Chandler mine at Ely has just laid off 100 men because, with the amount on the stock piles and the amount to be mined by the decreased force, it will have all it can do until the close of navigation. The men who have been laid off have been promised that they can secure work as soon as navigation is over. In the meanwhile they will be allowed to cut firewood for themselves from some of the company's property. Some of the ore in the stock-piles was mined two years ago, and there is still frost in the piles. One of the difficulties met with at present is a scarcity of cars.

MONTANA.

Jefferson County.

Bullion.—It is reported that this property has been bonded to J. M. Merrill and others, but it is said to be doubtful whether the sale is completed, owing to some difficulties over mill-site and water rights. The mine is owned by Fisher Brothers and is near Basin.

United States Mining Company.—P. J. Shields, W. D. McCurdie, George A. Cameron, J. Mullen, S. McFarlane and A. A. Collins are the incorporators of this company, organized for the purpose of operating properties in Wickes, Lump Gulch, Gregory and vicinity. The articles of incorporation state the purposes for which the company is formed is the carrying on of the business of mining, purchasing, holding, leasing, working and developing mines and mining claims; buying and selling, milling and smelting ores and minerals; building flumes and running tunnels, purchasing, holding, developing, building, using and selling water power and water rights, mills and smelters, and sites and lands necessary thereto, etc. The capital stock of the company is stated at $500,000, dived into 500,000 shares of the par value of $1 each.

Elkhorn Mining Company.—This company's detailed statement for July shows the usual amount of stoping and prospecting work. No new developments were reported during the month. The total amount of ore hoisted from the mine was 1,219 tons. The report of the mill department shows that 1,174 dry tons of ore were panned. The average assay value was 40·32 oz. The salt used was 14%. The value of the tailings was 3·55 oz., showing a proportion of 92·3% saved. The total product was 42,122 oz. of fine silver and 36 oz. pure gold. The batteries were in service 28 days 14 hours 28 minutes; and the pans 30 days. The estimated value of bullion shipped was $27,365; excess on June shipments, $277, and actual return from ore shipped, $1,384, making a total of $29,026. The current expenses, including salaries, labor and supplies, amounted to $22,485, leaving a balance as profit for the month of $6,541. In the surface department everything is running along smoothly. The supply of fuel has been greater than the consumption, and the contractors are at last in shape to keep it up.

Lewis & Clarke County.

Alpine.—This mine, 7 miles from Rimini, has been sold to Dr. A. H. Mitchell and others. The price is said to be $15,000.

NEVADA.

Storey County.

The directors of the Consolidated California & Virginia Mining Company have granted Edward S. Spring and other stockholders their request that a month's time be given them to furnish additional proof of the alleged stock speculations, etc., of Superintendent D. B. Lyman.

On the Brunswick lode, work is being pushed ahead and it is expected that crosscutting from the Savage workings will be commenced within the next two weeks. Messrs. Messer and Lyman left San Francisco for the Comstock, on August 23d, to look over the Concordia and Monte Cristo claims, lying on the Brunswick lode, which claims, the Ophir and Mexican companies are anxious to purchase, provided Mr. Lyman's report is favorable.

The Big Bar group of placer mines on Middle Boise River, 18 miles west of Rocky Bar, have been bought by Mr. Butts, of Salt Lake. A survey for a big ditch to convey water to the bar has been made, and the work of construction commenced. This ditch is to carry 1,500 in. of water for the working of the mine and sawmill. Mr. Butts will erect a sawmill at once.

Storey County.—Comstock Lode.

Following are extracts from the latest weekly official letters of the mine superintendents:

Alta.—During the week the north drift in the Keystone vein, 825 level, was advanced 12 ft., total length 94 ft. The face is in a quartz formation, heavily charged with iron pyrites, carrying some value. The south crosscut was extended 8 ft., the last 5 ft. in quartz giving low assays, with occasional spots of good ore, gold predominating.

Consolidated Collfornia & Virginia.—Last week, on the twelth floor (the fourth floor above sill floor of the 1650 level) in the opening made at a point 185 ft. in from the mouth of the drift run south from the east crosscut from the drift run south from the south end of the stope, on the ninth floor, we have opened out a space equal to two square sets of timbers. From the north end of the opening we have upraised and opened the thirteenth floor the size of one square set of timbers, or 5 ft. long by 6 ft. in width. The top part of this opening shows an average width of 4 ft. of ore, assaying $34.50 per ton. We have extracted from these openings 84 tons of ore, the average assay value, per car samples taken from the cars in the mine, was $32.72 per ton. 1750 level.—The south drift started from the end of the southeast drift on the sill floor of this level, at the point where connection was made by an upraise with the fourth floor of the stope above, has been advanced to a total length of 151 ft., in a quartz formation assaying $10 per ton. From this drift we have extracted from narrow streaks 5 tons of ore assaying $35 per ton. From the seventh and eighth floors on the west side near to timbers of old workings we have extracted 114 tons of ore, the average assay value of which, per samples taken from cars in the mine, was $35.37 per ton. We have extracted in all during the week 203 tons of ore, the average assay value of which, per samples taken from the cars when raised to the surface, was $32.80 per ton.

Central Tunnel.—The most northerly crosscut, which is being run west, near the Mexican line, on the tunnel level, is in 398 ft. The face shows some quartz assaying $2 to $3 per ton.

Chollar.—In stoping south on the fifth floor, above No. 2 crosscut, on the 450 ft. level, we have reached the south end of the pay ore, and are now opening the sixth floor. The pay is from 3 to 4 ft. wide, and of good grade, the pay lying principally in the coarse rock. We extracted and sent to the Nevada mill 23 tons and 1,500 lbs. of ore, the top car sample of which was $35.20 per ton.

Hale & Norcoss.—We have done some prospecting in the roof of the southwest drift from the main south drift on the 975 level, 15 ft. back from its face, and some good ore is showing. We are also preparing to upraise in the ore. We extracted during the past week 24 carloads of ore, the average mine car sample of which was $60.30 per ton.

Potosi.—The stoping in the pay ore above the north drift 550 level, and going north the pay is 3 ft. wide, but mixed with clay. During the week we extracted 40 tons of ore, the average car sample of which was $30 per ton.

NEW MEXICO.

Lincoln County.

Elnora.—Galloway & Alexander are working steadily on the Elnora and taking out good gold ore.

Brockman.—Brockman & Barringer put 18 miners at work on their claims last week. The Janeisch mill is running steadily night and day, crushing 40 to 60 tons every 24 hours. The ore averages over ½-oz. in gold.

Grant County.

Copper Flat.—Mr. N. S. Berray, formerly of the Old Dominion Copper Company of Globe, Arizona, has taken charge of the copper mines at Copper Flat, near Fort Bayard, says the Silver City "Enterprise." He has started development work upon the property by four openings, shafts and inclines. These openings will be sunk to a considerable depth. Fifteen men are employed upon the mines and the force will be increased as the necessity demands.

Socorro County.

The Maud S. mine at Cooney, N. M., is producing bullion steadily. There is considerable stoping ground above the tunnel level on the free milling ore, but the greater part of the work is being done on the lower levels in the base ore, five stamps being employed on the free ore and ten stamps on the base ore. The owners have a shaft 300 ft. deep below the main tunnel, with levels run at 150, 250 and 300 ft. The level at the 300, on the west side of the shaft, is in about 200 ft., on a vein of high-grade ore; the level on the 250 is in 175 ft., run on the same grade of ore. They are at present cleaning out the shaft, with a view to sinking another 100 ft.

The Confidence mine at Cooney, N. M., under the management of John Mitchell, has been running since the first of the year on a 50-ton mill capacity. The mine is well developed, the working at present being done through a tunnel 1,200 ft. in length, driven on the vein, and showing ore nearly the entire length. The owner has 3 shafts intersecting the vein at intervals, ranging from 100 ft. to 250 ft. in depth, which gives an average of about 200 ft. of stoping backs, and a width of vein ranging from 4 to 12 ft. They are still running the main tunnel, and also sinking a working shaft from the tunnel level, and are preparing to put in a hoisting plant with a power sufficient to go down 1,000 ft. They are putting another 10 stamps in the mill, and expect to have them running in 30 days, which will increase the milling capacity to 75 tons daily, according to present indications.

OHIO.

Belmont County.

Baltimore & Ohio Fuel Company.—Advices from Bellaire state that three of the largest mines on the Baltimore & Ohio west of Bellaire have consolidated under the name of the Baltimore & Ohio Fuel Company, with headquarters at Cleveland. The mines included in the consolidation are the Trolls' two mines near St. Clairsville Junction, Neff's, formerly known as Kidd's, at McClainsville, O., and Simpson's, at Glencoe. The object of the consolidation is to enable them to take lake contracts or any other large contracts they may be able to secure. As it was the output of any one of the mines was too small to take an ordinary lake contract, as they would be unable to fill it unless by working several weeks on it, whereas such orders must be promptly filled. By combining the output they will be able to take these orders and have steady work when there is any demand for coal. The officers of the new firm are C. W. Troll, president; G. W. Simpson, secretary, and Alex Neff, treasurer. All are experienced operators in this section. The action taken by the three mine-owners was a complete surprise, as it was not known that such a step was even contemplated. Between 1,000 and 1,500 men will be employed at the three mines, and the output will be daily 600 cars of coal.

OREGON.

Baker County.

Bonanza.—This mine last week shipped a gold retort worth something over $5,000, the result of 30 days' run with five stamps.

Virtue.—This mine recently made a bullion shipment of $14,000, the result of a month's crushing.

Douglas County.

Victory Mining Company.—This company, which is operating a large placer mine 7 miles north of Glendale, has recently put in a large pumping plant at a cost of $75,000, and will have it in operation in a short time.

Josephine County.

(From an Occasional Correspondent.)

The hills are alive with prospectors. A great many people were driven out of the cities on account of hard times, and are taking this method of helping themselves.

The operations conducted by Mr. W. H. Hampton at Placer are progressing well. They are beginning the construction of a new ditch three-quarters of a mile long, bringing in water on the present work at 300 ft. elevation. This will make a total length of 20 miles of ditch, all built inside of two years.

Ruble Mine.—This mine, on Coyote Creek, has yielded profitably this season. They are still cleaning bed-rock.

Steambeer Mine.—This mine, at Leland, is pending a sale, and is reported to have yielded profitably this season.

PENNSYLVANIA.

Anthracite Coal.

Coxe Bros. & Co. on September 2d issued orders to put their Tomhicken colliery in readiness to start up by September 15th. This colliery has been idle for 18 months. Employment will be given to 350 men. William Jones has been appointed to superintend the colliery.

The 5,000 employees of the Union Coal Company, Pennsylvania, Hickory Ridge, Hickory Swamp and Richard collieries, at Shamokin, have been notified that they are to work full time this month. This will be the first month this year that all of this corporation's mines have been put on full time. The officials of this company have not as yet taken any action on the demand of the employees for semi-monthly pays.

The Schuylkill Coal Exchange reports that the following collieries, drawn to return prices of coal sold in August, 1895, to determine the rate of wages to be paid, make the following returns: Boston Run, $2.04; Hammond, $2.03; Preston No. 3, $2.02; Merriam, $2.05; Locust Gap, $2.05. The average of these prices is $2.04, and the rate of wages to be paid for the last half of August and first half of September, 1895, is 15% below the $2.50 basis. The receivers of the Philadelphia & Reading Coal and Iron Company will pay at the rate of 10% below the basis.

The time limit allowed the Philadelphia & Reading Railroad and Coal & Iron companies to file an answer to the foreclosure suit instituted in the United States Circuit Court by the Olcott-Earle Reorganization Committee through the Pennsylvania Company for Insurance of Lives and Granting Annuities, trustee under the general mortgage, expired on September 2d. A motion was made in court on the 3d for an extension, on behalf of the Reading,

until September 15th. Shortly after the filing of the bill of the Pennsylvania Company as trustee, demurrers were presented for the Reading and for several of the security holders. The demurrers were subsequently overruled and the Reading was directed to file an answer.

Henry P. Brown, the examiner, filed his report in the United States Circuit Court at Philadelphia on September 2d in the extensively litigated suit of Coxe Brothers and the Interstate Commerce Commission against the Lehigh Valley Railroad Company. The proceedings were instituted some years ago by Coxe Brothers, who urged before the Interstate Commerce Commission that the Lehigh Valley Railroad had discriminated in freight charges for carrying coal against Coxe Brothers and other shippers in favor of the Lehigh Valley Coal Company. A large amount of testimony was taken before the Commission, and the finding of that body was against the Lehigh Valley Railroad. The Commission, however, was unable to enforce its ruling and the matter was taken to the United States Circuit Court, where Mr. Brown was appointed examiner to hear testimony. The testimony taken before him covers about a thousand pages. The testimony taken before Examiner Brown will be the subject of argument in the Circuit Court in the near future.

Bituminous Coal.

Jute & Co., one of the largest mining companies on the Monongahela River, have done away with their company store in conformity with an agreement with the miners on settling on a scale for mining coal. Other companies will follow suit and abandon the company store business.

Oil.

A press dispatch from Uniontown says that the excitement is again high in the Masontown oil fields which had such a run early in the year. The Forest Oil Company, of Pittsburg, which drilled the first successful well in Fayette County, has completed its second well, which is located on the Gilmore Farm. The bit struck the "Big Injun" sand Saturday and more oil than was expected was the result. To add to the excitement a test was made of the Shay & Kelly gas well, on Gray's farm across the river. The pressure was 500 lbs: in one minute and all further attempts to hold it longer proved futile. The well which the Forest Oil Company completed last February is still pumping about 10 barrels. Other wells will be sunk soon. The Masontown field is now considered a a continuation of the Sisterville field in West Virginia.

An important suit was commenced at Wilkes-Barre on September 3d for $250,000 by the attorneys for George B. Markle, Alvin Markle and their sister, Clara, against E. P. Wilbur, John Markle, the executors of General Lilly and others, charging that the latter are wholly excluding the former from any lot or part in the management of the extensive Jeddo mines of George B. Markle & Co., of Hazleton. The bill also charges gross mismanagement by John Markle as manager, involving a waste to the firm of large sums of money. The bill calls for an account and paying over to the plaintiffs funds wasted by the defendants, as the plaintiffs allege, to the extent of $250,000. When Packer, Lilly and George B. Markle, Sr., composed this firm all went smoothly as clockwork, but under the present management there is such a great friction, according to the bill, that the differences must be settled by the courts.

SOUTH DAKOTA.

Lawrence County.

Deadwood & Delaware Smelter.—Superintendent Carpenter has gone to Chicago, where he will meet the Swifts and complete arrangements for the proposed enlargement of the smelter. A large stack will replace the small one that was used in the experimental plant, thus making four large stacks. Dr. Carpenter will also order the machinery for a separating or refining furnace.

Ida Gray District.—This district is coming to the front with the Red Cloud in the lead, says the Deadwood "Pioneer." The shaft is down 100 ft. and ore improving in quantity and quality. The walls are well defined and a hoist will soon be erected. The Success and Rounder, belonging to Hoosier & Clark, adjoin the Glover group and are extensions of the Red Cloud on the north, are being worked, and some good ore is found at and near the base of the hill. It is a silicious quartz, a 2 ft. vertical, has a hard birdseye porphyry for a foot wall and a plumbago slate for a hanging wall. At a depth of only 7 ft. the vein is widening and becomes more oxydized and carries more arsenical pyrites. Edward Ball and Dr. McCarthy have a group of 5 claims on which they have a 20 ft. tunnel and have struck a chimney of ore that assays $20.

TEXAS.

Palo Pinto County.

American Coal Company.—W. W. Johnson, who owns a large tract of coal lands in the vicinity of Strawn, on the Texas & Pacific road, is preparing to work the property on a large scale, says the Fort Worth "Mail." A company has been organized for this purpose called the American Coal Company, and controls 5,000 acres of coal lands. The Texas & Pacific Railroad company has just completed a spur to the mines, which runs to the property, about one half mile from the main line of the road, one mile east of Strawn. The completion of this spur will greatly facilitate the development of the coal company's property. There is now on the dump quite a lot of coal, and shafts are to be sunk on various parts of the land at once. The vein is said to be from 38 to 48 in. thick and of good quality. Mr. Johnson, who owns a greater part of the property, formerly controlled the Thurber mines, and at the time of the sale of the property to the Texas & Pacific Coal Company, five years ago, Mr. Johnson agreed not to open up other coal mines within a period of five years. Mr. Johnson is president of the new company.

UTAH.

Juab County.

Bullion-Beck & Champion Mining Company.—This company is about to add 5 Johnson tables to its concentrator, and another Bryant mill to its plant, which will afford it a capacity for handling 200 tons of ore a day. For some time the management has been experimenting with various processes for the concentration of its low-grade ores, and the Johnson tables have, according to the Salt Lake "Tribune," shown themselves the best adapted.

Tintic Mining District.—Reviewing the mines of this district the Eureka "Miner" says: Wm. Hubbel is shipping ore from the Blue Rock group. The new pipe-line from the Mammoth to the Sioux is completed. D. Blanchard, of Diamond, is making a shipment of ore from the Keno mine. The Grand Central Mining Company is pushing work. Work on the Paxman mill-site will be completed shortly. The pit for the tank is already finished, and the boiler and fixtures for the pump-house are on the ground. It is reported that the supply of water will be ample for the company's use. Captain Woodman, of the Centennial-Eureka Mining Company, is in Eureka looking up a site for a new mill for that company to be built this fall. The plant will be similar to the one now operated by the Bullion-Beck Company. The ore shipments last week were as follows: From the Carisa, 3 carloads; Ajax, 4 carloads; Mammoth mill, 14 carloads concentrates; Mammoth mine, 1 carload ore; Bullion-Beck mill, 5 carloads concentrates; Bullion-Beck mine, 25 carloads ore; Centennial-Eureka, 12 carloads; Swansea, 2 carloads; Noon's Iron mine, 5 carloads; Dragon Iron mine, 3 carloads daily.

Tooele County.

Burlington.—A majority interest in this group, in the eastern part of the district, owned by Thornton, Graves and others, has been bonded to Salt Lake parties.

Cannon.—The shaft being sunk on the property of Mr. Angus M. Cannon, Mercur, is now down 300 ft. and the indications are that high grade ore will be struck shortly. A steam pump is to be put in at the Hecla shaft and the water piped over to the Geyser mill. By this means the Hecla people will be relieved of a very troublesome possession and the Geyser obtain the water they so much need at the mill.

Eagle.—The shaft on the Eagle group, north of the camp, says the Mercur "Mercury," is now down over 100 ft., and well timbered all the way. Some water is being encountered, but not enough to seriously retard operations.

Golden Gate.—This company is roasting a pile of ore in the open air, consisting of several tons. The company has a number of men at work developing some springs over on the Ophir side of the divide.

Rovers.—Work continues at the Rovers in good shape.

VERMONT.

Orange County.

Copperfield Mining and Smelting Company.—It is reported from Boston that operations are to be resumed in this company's mines at Copperfield, better known as the old Ely mine. It was formerly worked and had a considerable output, but was closed down about 1891 by the owner, Mr. O. K. Krause, and has not since been operated. The ore is a copper sulphide, and averaged about 4% metal. It is a property of value, though located some distance from railroad transportation. The present report is that a controlling interest has been bought by a syndicate which will invest new capital and work on an extensive scale.

WASHINGTON.

Stevens County.

Mineral lands in the vicinity of Huckleberry Mountain are not open to selection as idemnity lands by the Northern Pacific Railroad Company. This was the text of the decision in an important case heard July 18 by Register Logan and Receiver Flourney of the local land office, the decision being handed down on August 27th. The land in question involves sections 9, 11 and 15, township 30 north, range 38 east. Arthur Tinsley contested the claim of the Northern Pacific to these lands on the ground that they were chiefly valuable for the minerals they concealed and that they did not in any way come within the meaning of agricultural lands. The Cleveland mine is located on sections 9 and 10 and there are between 100 and 150 locations on other parts of the sections. In the decision the following points are made. First—The testimony of all the witnesses, who are well acquainted with the sections involved, is to the effect that the land is absolutely worthless for agricultural purposes, while many of them have mineral claims of more or less value upon the ground. Second—The only refutation of the testimony for contestant is the evidence of one man who was on the ground less than 24 hours, and consists of a denial of the statements made by contestant without any effort to prove the agricultural value of the lands. Third—It is found that the allegations in the affidavit filed as a protest against the Northern Pacific's application for a patent to the land above described have been substantially proven and all of the three sections are more valuable for mineral than for agricultural purposes; therefore patents should not issue to the Northern Pacific Railroad Company without further investigation of sections 9, 11 and 15, township 30 north, range 38 east, Willamette meridian.

FOREIGN MINING NEWS.

COREA.

Advices from San Francisco state that Mr. James R. Morse, formerly of San Francisco, but more recently of New York and Yokohama, has received from the King of Corea control of some mining districts in the kingdom. For 30 years foreigners have endeavored to gain a foothold in the rich mining districts of the kingdom. Mr. Morse is said to be the first to get a concession.

CUBA.

United States Consul Hyatt, located at Santiago de Cuba, in reporting to the State Department upon the efforts of the Ponupo Mining Company to supply manganese ore for the American market, gives some details of an attack upon the miners employed by this company by the Cuban insurrectionists. The company is an American corporation, the principal stockholders residing in Pennsylvania, but Spanish officers derive a tonnage royalty from the mines. This fact so excited the displeasure of the insurgents that they fired upon the miners, causing such a stampede that the mine was compelled to close. General Maceo has since promised protection, but it has been impossible to prevail upon the men to return. The company had just shipped its first shipload of 600 tons of ore to Philadelphia.

MEXICO.

Guanajuato.

Work is being vigorously pushed on the Tres Marias property, in the Pozos District, and it is expected that the Minerva lode may be cut at any time.

Hidalgo.

A large company has been formed in Pachuca to work several promising claims in the Actopan District. The principal stockholder is Mr. Jose San Viconte. All the stock has been subscribed.

From the Cabrera property, in the Real del Monte, large quantities of rich ore are being extracted. Another drift is being driven above level of the present one. The road from the mine to the junction with the "camino real" has been improved and will soon be passable for wagons.

A general meeting of the stockholders of La Luz Hacienda, Pachuca, was held in that city last week, and it was resolved to increase the stock 50%. All old shareholders may if they wish purchase this new stock; for two old shares a new one may be purchased. Nearly all the new issue will be taken up in this way.

Jalisco.

The Cuautemoc gold mine is looking well, says the "Mexican Financier." Mr. E. Folletete, the manager, is at present in the capital, and has in his possession some fine specimens of gold bearing rock. It is the intention to at once erect upon the property a mill for the treatment of the ores, which are free milling.

Lower California.

Jose Vidal is down 60 ft. on one shaft and 30 on another on the Recompensa, which is the property of Vidal and Riveroll. A rich vein of ore is in the bottom of each shaft.

There are quite a number of other prospects in these districts, some with a little work done on them, and others quite undeveloped. Roads have now been made all through that section, and wood and water is abundant.

At Jacalitos the Piedad is down over 100 ft., with a 5-ft. ledge in the bottom of the shaft. There are several hundred tons of ore on the dump, which will average very well. Excavation of this mine has been done in a workmanlike manner by Mr. Rannells, the superintendent, the shaft being carefully timbered and well ventilated. A two-stamp prospecting mill is now packed in San Diego and ready to be brought in, and later on the number of stamps will be increased as further developments are made.

Sonora.

Mr. Alexis Janin, the well-known mining engineer, of San Francisco, has begun a suit in the Superior Court at that city, against Howell Hines et al. The defendants were partners in mining property at Minas Prietas, and worked the mine

under the firm name of Chamberlain & Price. Hines was their general manager. The plaintiff says that on June 16, 1894, the mining firm contracted with the defendant to pay a royalty and 45c. on each ton of tailings worked by them each month. They did not, however, he adds, carry out the contract and they now owe him $9,500, for which amount he sues.

Zacatecas.

On the dump of the Cayatal mine, in the district of Malanorte, is a large quantity of ore, assaying from 15 to 20 marks.

There are a number of new mining enterprises being started in the San Cristobal District, to the south of the city of Zacatecas.

In spite of the reports that there are large quantities of ore in sight in the mine of Purisima de los Compadres, an assessment of $5 has been levied.

ONTARIO.

Seine River District.

(From an Occasional Correspondent).

AUGUST 25th, 1895.

Since the acquisition by Captain J. C. Foley, for nearly $30,000, of the adjacent claims of "A L 74" and "A L 76" mining affairs in this immediate section have received great impetus. The Foley estate now consists of 200 acres, and honeycombed as it is by a series of well-defined auriferous quartz lodes that traverse diagonally every section of their old and new claims, renders their prospects for successful operations very bright. Upon the completion of the transfer Capt. Foley visited his camp, and after arranging for certain necessary surface improvements, including the construction of roads, docks, etc., left for the Canadian Pacific Railway to personally superintend, and if possible facilitate the delivery of machinery. This plant, consisting of hoists, pumps, steel boilers, air compressor, and a set of Rand drills, is now en route for his mine; while already 27 men are engaged under Foreman Reaves preparing for its reception.

"Bill Wiegand" Claims.—These claims, situated directly between the Foley and Hillyer mines, consist of the well-known mining locations Nos. A L 103, 104, 105 and 106. Considerable successful development work has been carried on here since my last visit (under the direction of A. Lougheed), notably upon locations 104, 105 and 106, upon the two latter of which, wherever openings have been made, a very good showing of native gold is visible. Almost all of this quartz is of a free milling character.

Harold Lake Mine and Mill.—This property is located upon the head waters of La Seine River, and includes mining locations 219 X to 222 X, and others. A force of miners under the direction of the Wiley Bros., and Chas. S. Morris, have operated both mine and mill continuously here since April last. The mill consists of 5 stamps (Fraser & Chalmers) with 2 Frue vanners. Mr. Gibbs, of Ft. William, purchased the interest of Mr. Morris in this property for $20,000, for his son, who, with the Wiley Bros, continue mining and milling operations there. The ores of this mine are chiefly free milling. Many American capitalists, speculators and scientists, are now upon La Seine River and its tributaries.

La Seine Mining and Milling Company.—The machinery at this property (adjacent to the "Bill" Wiegand's mine) has lately been released from the hands of the Dominion Customs people. On August 24th the new manager, Geo. Hillyer, in company with Mr. Hillyer, Sr., arrived at the mine, and after adjusting certain claims, made a thorough inspection of the property preparatory to reorganizing and reopening their mine and mill.

New Townships and Town Sites.—The Ontario Government has instructed Mr H. P. Proudfoot to lay out another township in La Seine, above Foley's, while Mr. McCallum, another government official, is employed in surveying the site of La Seine City.

Randolph Claims.—These claims, including A L 113, 114 and 116, situated to the northeast of the Hillyer, also show up well in finely dissemenated gold in veins, varying in width from 7 in. to 7 ft. The small vein is very rich. Mr. Randolph, Sr., is present at his claim.

SOUTH AFRICA.

Transvaal.

Electricity is making progress in South Africa, as evidenced by the rapidly increasing mining plants being put in operation there. The Electric Construction Company, Limited, of London, has supplied a plant for the City & Suburban Mine, and three dynamos for the New Crœsus Gold Mining Company, near Johannesburg. The same company has equipped the New Comet Mine with an electric lighting plant, and the Wemmer Mine is also installing electric lights.

The output of the Witwatersrand district in the Transvaal, as reported by cable, was 199,453 oz. of gold for the month of July. This result was 1,488 oz. below the extraordinary maximum reached in June, but was nevertheless greater than that of any other previous month. For July, 1894, the production was 167,953 oz., while for the same month in 1893 it was 126,160 oz. For the seven months ending July 31st, the output of the Witwatersrand mines has amounted to 1,313,000 oz.; this amount is greater than was produced in the entire year 1892. Should no increase be shown in the remaining months of the year the total output of the Witwatersrand for 1895 would be somewhat over 2,300,000 oz.; but as a number of the new plants which have been erected during the present year will soon come into operation it is probable that the later months will show a considerable gain.

LATE NEWS.

At the annual meeting of the stockholders of the New York, Susquehanna & Western Railroad Company, held in Jersey City on September 5th, the following directors were elected: Amos L. Hopkins, Roswell Eldridge, Simon Borg, Henry Sanford, H. O. Armour, Henry B. Plant, Thomas A. McIntyre, Cornelius C. Cuyler, Garret A. Hobart, George W. Young, Cyrus J. Lawrence, W. L. Bull and Gustav Kiffel.

It is reported that the Morning mine, together with the You Like, both on Chloride Hill, near Mullan, Cœur d'Alene, Idaho, will resume operations within a few weeks and a few men are already at work attending to the preliminaries. The two properties, the Morning and You Like, have been leased by Thomas Greenough, of Missoula, Mont., and Peter Larson, of Helena, Mont. The mines will be operated under joint-management, the You Like ore to be transferred by tramway to the old Morning mill for treatment. This enterprise when under full headway will employ about 300 men.

At a largely attended meeting of Pittsburg and Eastern window glass manufacturers held in Pittsburg, Pa., on September 5th, an Eastern window glass pool was formed. This is the first pooling arrangement that has been effected for over a year, the last one having gone to pieces on account of internal dissensions. President H. Sellers McKee and Secretary William Loeffler attended the meeting and the discord that formerly existed among window glass manufacturers was removed. An organization modeled upon that recently formed by the Indiana window glass manufactures was formed. All the manufacturers present agreed to sell all their glass through one agency, which will be located in Pittsburg. The arrangement goes into effect this fall at the beginning of the next fire. All the factories of Pennsylvania, New York, New Jersey and Maryland will be in the pool. It will include the large Bodine factory at Cohansey, N. J. A conference will be held with a committee from the Indiana manufacturers in a few days at Chicago, when a list of prices will be arranged. It is understood that the Western and Eastern pools will work together and will follow a uniform price list. The Eastern pool includes 600 pots and together with the Indiana pool will control 9% of the window glass production of the United States.

Secretary Loeffler gave out a statement in which he said that the pool would not seek to squeeze up prices, but that it had been organized to give united battle to foreign glass which has been coming in in greater quantities than ever before since the tariff law went into effect. He also said the pool would result in giving consumers a more uniform and a better quality of glass as the work of the factories would come under a system of uniform supervision at the hands of the selling agency. All men employed in the window glass factories of the United States not members of L. A. 300, which numbers only blowers, cutters and other skilled workmen, have demanded an advance of 12½%. They threaten to strike next week unless the advance is paid. Window glass factories all through the country are firing up preparatory to resuming operations the latter part of this month. The unskilled workmen number about 5,000 men, and are organized.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Sept. 6.

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending Aug. 31st and year from January 1st:

	1895.		1894.
Shipped East and North:	Week.	Year.	Year.
Allegheny, Pa.	37,500	2,558,247	737,776
Beech Creek, Pa.	75,875	1,722,409	838,310
Broad Top, Pa.	†	†	240,642
Clearfield, Pa.	84,400	3,564,106	1,523,210
Cumberland, Md.	77,256	2,134,816	1,795,128
Kanawha, W. Va.	‡	‡	1,6[illegible]0,021
Phila. & Erie R. R.	1,809	37,355	49,652
Pocahontas Flat Top	†56,725	†1,862,675	2,199,297
Total.	333,556	11,876,599	9,034,056

‡ Returns not received. † Week ending Aug. 24th.

	1895		1894
Shipped West:	Week.	Year.	Year.
Monongahela, Pa.	14,350	556,481	462,663
Pittsburg, Pa.	34,325	1,260,128	909,494
Westmoreland, Pa.	33,425	1,263,331	989,681
Total.	82,100	3,079,940	2,361,838
Grand total.	415,656	14,956,539	11,395,874

Production of coke on line of Pennsylvania Railroad for the week ending Aug. 31st, 1895, and year from January 1st, in tons of 2,000 lbs.: Week, 118,421 tons; year, 3,729,198; to corresponding date in 1894, 1,871,910 tons.

Anthracite.

The anthracite coal trade continues Micawber-like to wait for something to turn up. The market shows the same features which we have reported this past fortnight. There is as yet no appreciable increase in the demand as dealers are in no urgent need of adding to their stocks. They report that domestic consumers are beginning to buy more freely but that their orders on the whole are small, showing that there is still little disposition to buy winter supplies at this time. Such being the case there is very little real strength to the market, all reports to the contrary notwithstanding.

When we spoke last week of an improvement we specially emphasized the fact that it was merely relative. Thus, while the companies are not offering coal at the exceedingly low figures of a month ago, they are not selling any. Egg and stove are reported to be scarce, but no stove, save perhaps special grades, can be sold for more than $3 on board. The dealer can still go "shopping" and buy at prices which a year ago would not have been entertained, and the trade was bad enough in all conscience then.

Persistent rumors continue to circulate and Wall street affects to believe that there is much truth in them anent an understanding among the coal carrying trade. At the same time every high official of every coal company says that he knows nothing of any impending settlement of the coal trade. There are too many questions and problems in the trade to be settled by one stroke. The reorganization of the Reading is only a step in the right direction.

Granting that the Reading is reorganized, the other companies must then agree on the matter of allotment of tonnages. Assuming that this too is done, there remains to be seen whether history will not repeat itself and whether the companies will not disregard their allotments, as they have in the past. All agreements short of an illegal combination are fatally weak in that if one of the companies breaks faith the others have no redress but to do likewise. All talk of a great central selling agency is obviously absurd. The anthracite coal trade has not been conducted on a businesslike basis by any company, and nothing but an epidemic of sound sense can help it.

The lamentable lack of proper statistics is felt now more keenly than ever. The figures recently published giving the percentage of the total coal shipments carried by each road are absolutely valueless in that they show nothing upon which to base any calculations of moment. They merely show that some companies were more willing to sell coal at low figures than others. The ratio between the amount actually mined and the amount which could have been mined had they all worked on full time is not the same in all cases, and the figures are therefore useless for purposes of comparison. If the trade is to be re-organized, there must be a better basis for calculation.

Bituminous.

So far as relates to new business the soft coal trade is dull and featureless. This brings about less competition and fewer rumors of low prices, as all producers continue to devote practically their entire attention to delivering coal contracted for.

Every other week from some natural cause or other there is an advance of 5 to 10c. in Ocean freights, which frightens sellers holding any great quantity of unfilled delivered contracts, and as soon as freight rates return to the old figures these sellers make more strenuous efforts to rush forward their coal. This gives to the market an appearance of greater activity than really exists, and accounts for some of the large tonnages which have been shipped.

Most of the mines are producing up to their capacity, and though there are few signs that the storage capacity of consumers is entirely filled, it is thought that in a number of instances there are considerable stocks on hand.

The territory east of Cape Cod continues to take the greater portion of the coal, though the Sound ports are steadily increasing their demands, those ports nearest to the Cape taking more than those nearer to New York.

The New York harbor trade shows a somewhat better demand for coal, which has moved forward quietly and without attracting attention.

The all-rail trade is slightly improved, though there is difficulty in getting cars for points on foreign roads, and the smaller sizes of cars have been hard to get.

Transportation from the mines to tide is good. Shipping agents have lately been troubled greatly by irregularities in transportation, which made it impossible for them to provide vessel tonnages for the delayed coal. Vessels are now receiving good dispatch in loading at all the shipping ports and this probably has been one of the principal inducements for the low freights this week. The car supply is fair on some roads and not so good on others, but most of the shippers on all roads are receiving enough cars to send large tonnages forward.

Vessels are in good supply at the various shipping ports. We quote ocean freight rates as follows from Philadelphia: To Boston and Salem, 65c.; Portland and Portsmouth, 65@75c.; Providence, New Bedford, Bridgeport, New Haven and other sound ports, 60c.; Wareham, 90@95c.; Lynn, 80c. @$1.; Newburyport, 75@80c.; Dover, $1.20; Saco, 92½c.; Bath, 70c.; Gardiner, 70@75c.; Bangor, 75c.

Buffalo.

Sept. 5.

(From our Special Correspondent.)

No special features connected with the anthracite coal trade—either in prices, supply, stocks or de-

mand. The stocking up of cellars with winter supplies is anything but brisk.

Bituminous coal is firmer, and the demand has improved somewhat. Consumers do not anticipate any material increase in quotations, therefore see no reason for contracting a-head of their requirements. Coke is in good demand; market firm.

Lake freights are decidedly strong on coal, and the movement last week increased in volume, but no advance was made in quotations. The situation has improved greatly since the opening of navigation.

Work has been commenced at Ashtabula, O., on harbor improvement so as to give a channel of 20 ft.

The report of the Board of United States Engineers on the probable effect of the Chicago Drainage Canals upon the lake and harbor levels, is a very important document. The opinion of the Engineers is to the effect that the canal will injuriously affect the navigation of all the lakes except Superior. Sharp controversy and agitation will now be in order throughout the lake districts and in Congress. The Canadian Government is also considering the subject.

The following statistics of the coal trade of Buffalo, N. Y., were furnished by Mr. William Thurstone, Secretary of the Merchants' Exchange: Railroad receipts and shipments are not reported by request. Receipts by lake thus far this season none. Shipments of coal westward by lake for month of August 319,860 net tons, as compared with 253,988 net tons in 1894, and 252,945 net tons in 1893; for the season to September 1st, 1,149,689 net tons, as compared with 1,299,067 net tons in 1894, and 1,440,074 net tons in 1893. The receipts of coal by canal for month of August, 3,509 net tons as compared with 11,102 net tons in 1894, and 13,757 net tons in 1893; for the season to September 1st, 5,482 net tons as compared with 16,086 net tons in 1894, and 39,429 net tons in 1893. The shipments by canal for month of August, 897 net tons as compared with 3,011 net tons in 1894, and 2,285 net tons in 1893; for the season to September 1st, 4,289 net tons as compared with 5,413 net tons in 1894, and 12,024 net tons in 1893. The aggregate shipments of coal by lake to September 1st, show a decrease of 149,378 net tons under 1894, and 299,385 net tons under 1893.

The rates of freight during the month of August were as follows: 50c. to Chicago and Racine; 45 to Milwaukee, Sheboygan and Green Bay; 35@40c. to Saginaw; 25@30c. to Duluth and Lake Superior ports and 25c. to Toledo and Detroit; a year since the rates were as follows: 45@40c. to Chicago and Milwaukee, 50c. to Racine and Green Bay, 30c. to Duluth and Lake Superior ports, 25c. to Toledo and Detroit and 35c. to Saginaw and Green Bay.

The distribution of the coal shipped thus far this season was to the following places: 330,658 tons to Chicago, 308,859 tons to Milwaukee, 71,375 tons to Duluth, 111,350 tons to Superior, 34,715 tons to Toledo, 2,555 tons to Detroit, 80,000 tons to places not named via Tonawanda vessel, 10,800 tons to Gladstone, 14,280 tons to Manitowoc, 4,625 tons to Sault Ste. Marie, 7,500 tons to Bay City, 3,975 tons to Kenosha, 16,372 tons to Saginaw, 15,636 tons to Racine, 19,650 tons to Green Bay, 3,600 tons to Sheboygan, 2,900 tons to Marquette, 3,750 tons to Washburn, 2,600 tons to Kenosha, 1,770 tons to Menominee, 632 tons to Windsor, 300 tons to St. Clair, 175 tons to Alpena, 650 tons to Ludington, 1,265 tons to Cheboygan, 750 tons to Marine City, 2,924 tons to Ashland, 675 tons to Marinette, 485 tons to Port Huron, 8,495 tons to Lake Linden, 632 tons to Owen Sound, 1,650 tons to Michigan City, 3 0 tons to Ontonagon, 5,905 tons to Fort William, 800 tons to Traverse City, 1,750 tons to Port Burwell, 500 tons to Algonac, 1,000 tons to Portage, 325 tons to Oscoda, 400 tons to Put-in-Bay, 60 tons to Serpent River, 175 tons to Black River, 650 tons to Grand Haven, 320 tons to Sand Beach, and 600 tons to Benton Harbor.

Chicago. Sept. 4.

(From Our Special Correspondent.)

There is no change in the coal situation in this market; the selling of both anthracite and bituminous coal continues to be only in limited quantities and at low prices. Retailers are not doing as much business as might be expected. It would be presumed that householders would take advantage of the extremely low prices and lay in their winter's supply, but they are not doing it to any great extent. It is very probable that prices will advance before the cold weather sets in, for coal has been selling low for some time, and it, like all other articles of much demand, is bound to advance to a price wherein there will be a profit to the dealer. Shipments of coal to this market are fairly large, the Lake being quite a factor in the tonnage. Bituminous coal is having a steady call, though those who buy are taking it in small quantities. There is no change in the coke trade, the buying of that article continuing fairly good.

Pittsburg. Sept. 5.

(From Our Special Correspondent.)

Coal.—Miners are again on a strike, the Creedmore miners once more suspending work. The same old trouble over a pit boss leads to another spell of idleness, being the third suspension within a short time. Over 200 men deserted the pit on Monday.

That the coal supply in Dunbar district, of the Connellsville region, is not inexhaustible is no longer a matter of conjecture. The Hill Farm mine, it is said, will be run out in less than 10 years, and the Anchor mine is now being worked at the last coal line limit. The Anchor supplies coal for 100 ovens, affording employment to 80 men. The Reed and Uniondale mines have already been abandoned, and consequently over 100 ovens are crumbling to pieces.

There seems to be no immediate prospect for water; the last river shipment was early in April. Railroad coal operators as well as miners are complaining loudly over the scarcity of cars. W. H. Brown & Sons have 3,325,000 bushels of coal loaded waiting a rise.

Connellsville Coke.—Production is increasing slowly. It seems strange that with the heavy advance in iron and steel, coke still remains at the prices set April 1st. It is not reasonable to expect that prices will remain at the present figures much longer. Production fell off 1,575 tons; the total shipment reached 152,782 tons. The car supply is better than it has been for some time past, with continued prosperous iron business and a good water supply the coke trade will be undoubtedly good for some time to come. The region shows 15,212 ovens in blast and 2,622 ovens idle. There is no change in the active or idle list of ovens, and none is expected. The early part of September will likely show some changes, and it is expected that a few ovens will be added to the active list. The product for the region for the week estimated upon the ovens drawn amounted to 144,523 tons. The average time made by the 75 plants in blast was, 5·55 days, a slight increase. The H. C. Frick Company made six days at 15 plants, and five days at nine plants. The McClure Coke Company made five days at eight plants. W. I. Rainey made five days at five plants. The four Cochran plants made six days. Shipments amounted to 8,284 cars, distributed as follows: To Pittsburg, 2,467 cars; to points east, 1,567 cars; to points west, 4,250 cars. No charge in values.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, September 6th, 1895.

Pig Iron Production and Furnaces in Blast.

Fuel used...	Week ending Sept. 7. 1894		Week ending Sept. 6, 1895.		From Jan. '94.	From Jan., '95
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
Anthracite.	35	16,800	41	23,257	561,547	713,025
Coke...	79	95,900	140	143,820	3,028,739	4,951,214
Charcoal...	22	3,760	22	4,428	140,997	144,493
Totals ...	136	116,460	203	176,505	3,731,283	5,818,732

Instead of showing the reaction which has been so persistently predicted in certain quarters, the iron market everywhere is in a most active condition. Our advices from all quarters are that demand is fully up to the supply, and that any additions to production likely to be made by the starting up of mills and furnaces will be readily absorbed, without causing any reaction in prices. The production of Bessemer pig and forge irons is indeed rather behind the demand, and in the Western markets there is something like a rush for raw material. The greatest demand just now is for Bessemer iron and steel billets, and manufacturers whose supplies are not contracted for are likely to have some difficulty in procuring their quota. Those who have held off in hopes of a fall in prices may be seriously disappointed, and it looks as if some of them had realized the fact already and were trying to get their supplies.

NOTES OF THE WEEK.

The reported sale of 25,000 tons of Southern pig iron to the Carnegie Steel Company for use in the basic open-hearth steel plant, has been denied by officers of that company.

The manufacturers of wire nails met in Pittsburg September 3d and put up the price of the products 20c. a keg all around, the advance taking effect immediately. This makes the price $2.25 a keg in carload lots and $2.35 in smaller quantities Since the last advance in wire nails steels billets have advanced $4 a ton, and this necessitated the latest increase.

The Western Bar Iron Association held a largely attended conference in Cleveland, O., September 3d. Nearly all of the larger manufacturers of the Middle and Western States were either present or represented. It is understood that the chief subject under discussion was a proposition to again advance the price of the product of the bar mills, and that the advance was decided on.

A dispatch from Cincinnati, September 6th, says: Consternation has been created in Cincinnati mercantile circles by the announcement of an increase in the rates on pig iron, and, contrary to former usage, no contracts will be cared for dated after August 30th. It is now said that the advance was made without reference to the commissioner of the Southern roads. The fact that the advance has been made at a time when the iron business is of about the biggest volume the country has ever known, adds to the indignation of the iron men. The advance will play havoc with some big orders. Some of the iron men lay the blame for the advance at the doors of Mr. Rockefeller, citing the fact that an advance of 50c. per ton from points south will equalize the rates from points using Lake Superior ore. A representative from here is now in New York trying to arrange for rates from Cleveland that will enable these irons to come into competition with the Southern iron.

THE LOCAL MARKET.

The New York local market, while sharing to some extent in the general buoyancy, is comparatively quiet. New York is not an iron center and its trade represents this special market less than is the case with many other cities. The local demand continues good and sales are large enough to indicate a steady business for the fall and winter.

Pig Iron.—The larger local foundries are generally well stocked, and there is no special demand. From near-by New England points there is a good deal of buying and orders are coming in freely from several points, some of considerable size. Shipments eastward by rail and water are unusually heavy.

We quote for Northern brands, No. 1 X, $13.75@$14.25; No. 2 X, $12.75@$13 gray forge, $12.25@$12.75. For Southern irons prices are: No. 1 foundry, $13.50@$14; No. 2 foundry, $13@$13.50; No. 1 soft, $13@$13.75: No. 2 soft, $12.75@$13.25; forge, $12.50@$12.75.

Cast Iron Pipe.—There are several orders on the market, all of moderate size. In one case an order which has been held back for some time for lower prices was taken on private terms, which are reported to be the highest made this year.

Steel Billets.—There is some pressure to buy for early delivery, but the mills are all full, and nothing can be had except at a sharp advance. Prices are somewhat excited, but the best that can be given are equivalent to $26@$26.50 at tidewater. This is not far below the price at which foreign billets can be placed here, but we hear of no sales of the latter.

Spiegeleisen and Ferro-manganese.—There is a much more active demand and prices are higher, as there are no surplus supplies. We quote for domestic spiegeleisen $22@$23 and for foreign $24@$25. For ferro-manganese prices show a marked advance and foreign is quoted $50@$51.50 at tidewater.

Merchant Steel.—Orders continue to come in steadily and business is active in view of an expected rise in prices. We quote: Tire steel, 1·70@1·85c.; toe calk, 1·90@2c.; Bessemer machinery. 1·60@1·70c.; open-hearth machinery, 1·75@1·85c.; spring, 2@2·10c.; steel hoops, 1·40@1·45c. delivered; links and pins, 1·70@1·80c.; soft steel bars, 1·40@1·45c.; steel axles, 1·55@1·65c.

Structural Iron and Steel.—Not much new business is reported, though some large contracts will soon be offered. The mills are busy on old business, and prices remain steady. Quotations are: Angles, 1·55@1·65c.; beams up to 15 in., 1·65@1·75c.; channels, 1·65@1·80c. on dock; tees, 1·80@1·90c. on dock, all firm.

Plates.—Plates are still in demand, and early deliveries cannot be had. Some small lots needed for immediate use have been sold from second hands at a considerable advance. We quote: Steel plates, flange, 2@2·20c.; firebox, 2·35@2·50c.; boiler shell, 1·90@2c.; tank, 1·85@1·90c. Universal mill plates are in demand and are held at 1·85@1·90c.

Rails and Rail Fastenings.—No important sales of standard sections are reported, and the market is quiet. The improved Western business keeps prices firm. We quote Standard rails at tidewater, $24.75. In rail fastenings prices remain firm. Fish and angle plates, 1·40@1·45c. at mill; spikes, 1·80@1·85c.; bolts and square nuts, 2@2·15c.; hexagonal nuts, 2·10@2·20c. delivered.

Scrap and Old Material.—Old iron rails are not to be had here at any price. Foundry scrap is in demand and good lots are taken up as fast as they can be found; prices are difficult to give, but $12.50@$15 may be quoted, according to quality.

Chicago. Sept. 4..

(From our Special Correspondent.)

The Chicago iron market continues in a very satisfactory condition. Higher prices in most lines are firmly maintained, while further advances are observed of a small nature. Lake Superior charcoal iron continues to head the pig iron market in point of sales. The Illinois Steel Company having discontinued quotations during the week, but few rails, billets or rods were disposed of. Bars were in good demand, several fair-sized contracts having been booked.

Pig Iron.—Sales of Lake Superior charcoal iron continue very large, fully 20,000 tons of it having been contracted for during the week, and there are sales in sight that will foot up an equal figure; this iron is now selling at $14 per ton, and it looks as though the price would be 50c. higher before a great while. Other pig irons have been in but fair demand. Southern iron has sold in moderate quantities. The Southern, like the Northern furnaces, are not particularly anxious for business, and are therefore not pushing very strongly for trade.

Prices are per gross ton f. o. b. Chicago: Lake Superior charcoal, $14; Lake Superior coke No. 1, $13.50; No. 2, $13; No. 3, $12.50; Local Scotch No. 1, $13.50; No. 2, $13; No. 3, 12 50; Jackson County silveries. $16; Southern coke, foundry, No. 1, $12.75@$13; No. 2, $12.25@$12.50; No. 3, $12@$12.25; Southern soft. No. 1, $12.50@12.75; No. 2, $12.25; Southern car-wheel iron. $17.50 Southern silveries No. 1, $14; No. 2, $13.50; Tennessee charcoal No. 1, $13@$13.50; Bessemer, $13.50@$14; Ohio strong softeners, $13.50@$14.

Bar Iron.—Good business has been the rule for the week, and some fair contracts were closed.

Inquiry from some of the larger users of bars would bespeak some very good contracts soon. Bar iron is selling, common, 1·40@1·45c., and refined, 1·50@1·55c.

Structural Material.—Bridge and building shapes continue in good demand and several fair-sized contracts have been made in the past two weeks. Buildings in Chicago and elsewhere are being figured on. Prices are for universal plates, 1·90@2c; beams and channels, 1·90@2c; angles, 1 85@1·90c; tees, 1·90@2c.

Merchant Steel.—The demand for merchant steel has been fair and sales aggregating a good figure were made with the week. No contracts of any size were made, the main trade being in small lots. Prices are: Bessemer bars, 1·50@1·60c; tool steel, 5 50@7·50c. fire steel, 1·70@1·80c; machinery, 1·90@2c.

Billets.—The Illinois Steel Company was practically out of the market this week and but few sales were made of billets or rods. Billets are still selling $24@$24.50. Rods remain $31@$32.

Steel Rails.—But few sales of rails are reported, the Illinois Steel Company having refused quotations during the week. Rails are selling $25@$27.

Old Rails and Wheels.—A few small sales of old steel rails are reported, nothing having been done with old iron rails or wheels. Old wheels are quoted $11.50 and old iron rails $16@$16.50.

Cleveland, O. Sept. 5th.

(From Our Special Correspondent.)

Iron Ores.—Not in years has the iron ore market exhibited such variance in opinion as at present. Usually the judgment of different shippers as to prices is only a few cents apart. To-day it is 50c. or more. The reason is that the market is practically cleaned up. Ore shippers have sold out, in most cases, even the odd lots that are usually the last to go. It is the furnacemen who are making the inquiries. The shippers do not make quotations unless they are asked for, and the advances which they feel justified in making are as a rule paid without demur. It is an unusual condition of the market, due to the sharp advance in pig iron and the depletion of ore stocks. The quantities of ore sold now, however, are so limited as to scarcely afford the basis for stable quotations. Ore in stock at the Lake Erie ports is better sold out at this season than in years. Stocks below Ashtabula—at Erie and at Buffalo—which supply the East are entirely gone. During the week sales of Mesabi ores have been made at $3.50, the highest price on record for that ore. The same ore was selling last April at $2.35. One sale of No. 1 specular Bessemer is reported this week at $4.50.

In the movement of ore this week there are two notable features, the resumption of shipments from the Marquette range, and the general turning of vessels from ore to wheat cargoes, both influences tending strongly to advance freights. The steam-shovels at Ishpeming and at Negaunee were put into operation early in the week under the protection of a strong military force, and vessels under season contract, the cargoes of which had to be cancelled during the past eight weeks on account of the strike, were recalled, and have begun loading again at Marquette, thus withdrawing these vessels from trade at the head of the lakes, to which they had been diverted.

Until this month the ore traffic was the predominating influence on the lakes, but the wheat shippers at Duluth have bid so strongly for vessels, increasing the rate to Buffalo during the past week from 3 to 3½ cents, that a large portion of first-class boats have gone into that trade. The rate of 3½ cents per bushel is equivalent to $1.30 per ton on ore. However, the ruling quotations on ore from Duluth to Lake Erie ports is still $1, the same as last week. The rate from Escanaba to Lake Erie ports has advanced during the week from 60 to 70 cents, while charters from Marquette have not yet been made, the contract boats being ample, so far, for the ore which the steam shovels have been able to get out.

On the scattering sales of ore now made, the following are quotations on Lake Erie docks: Standard specular Bessemers, $4.25@$4.50; standard Bessemer hematites, $3.50@$3.75; standard specular non-Bessemers, $3 25@$3.50; standard non-Bessemer hematites, $2.50@$2.75 per ton.

Philadelphia. Sept. 6.

(From Our Special Correspondent.)

Pig Iron.—There is a fair demand for pig iron, but not such a rush as three or four weeks ago. No. 1 Foundry is strong at $13 75@$14.25, but no first-class iron was offered this week. Buyers want No. 1, but are hanging back in some cases. No. 2 runs from $12.50 to $13.75. There are several parties asking about winter deliveries. There are also a number of buyers looking up winter deliveries of forge, but they hope and half believe that the increasing production will reduce quotations before their yards are empty.

Steel Billets.—The disturbed condition of Western Pennsylvania markets is reflected here. There are several concerns here that would like to buy, but with prices quoted at $25@$26.50 very little business is done. Consumers will wait a while, meanwhile anxiously looking for developments. There will be big buying within 30 days. The production of billets in Eastern Pennsylvania will soon be increased considerably. Agents of makers have very little to say as to the course billets are likely to take as long as Bessemer pig is being scrambled for as it is. They only say all Eastern surplus Bessemer will soon be bought out of the market.

Merchant Bar.—City mills are all overrun with new orders, but some country concerns are looking after winter business, and it is said that quotations have been shaded from recent extreme figures. Manufacturers show a desire to keep their order books well filled. Store prices are 1·60@1·70, mill prices 1·40@1·50, according to quality.

Skelp.—A good many big orders have been cleaned out. New business is coming in but not with such a rush. Where buyers are willing to let manufacturers deliver at their convenience small concessions are to be had from 1·50.

Sheets.—The sheet mills are on full time, with enough work on the books to keep prices firm.

Merchant Steel.—Prices are high and firm and orders crowding in.

Nails.—Buyers say there are symptoms of a weakening of prices, growing out of the fact that stocks have accumulated at distributing centers. Up to this date, however, prices are firm, and manufacturers think they will stay where they are during the fall.

Pipes and Tubes.—There is fair activity and good prices.

Plate and Tank.—The opening up of considerable engineering work has helped prices. An advance on ordinary orders is maintained, but it is asserted that on exceptionally large orders at convenient delivery favorable terms to buyers are made, but such prices would not be openly given. Tank steel is 1·90, heavy plates 2·00, shell 2·10 and flange 2·20.

Structural Material.—Just now the general run of orders is for warehouse, factory and office building and such like work, on which manufacturers are quoting strong prices and getting them. With crude material on the up grade, it is useless to hope for concessions which certain large buyers, it is understood, have asked for. Angles are 1·70, beams and channels 1·80.

Steel Rails.—Buyers are asking about rails, but very little actual business was done here this week.

Old Iron Rails.—Quoted at $16@$17.

Scrap.—Scrap continues active for all kinds. Choice railroad sold at $14.50; No. 1 wrought at $14, heavy steel, $15; wrought turnings, $8@$9.

Pittsburg. Sept. 5.

(From Our Special Correspondent.)

Raw Iron and Steel.—The business situation during the week has developed no unfavorable feature, but rather the reverse. Preparations for fall wants are actively under way. The expansion of business is certainly becoming more pronounced now that the vacation season is about over. Business all over the country, measured by bank clearings, is nearly one-fifth larger in volume than it was a year ago. The activity in the industries is unabated and there has been further advances in iron and steel products. Furnace production at all points East, West and South has been fully absorbed and all working mills are well supplied with orders. New business is notably active in the central iron centers.

At the present time, in most parts of the West, pig iron for immediate delivery cannot be had, and, as a result, a number of foundries, which had allowed their stock piles to get too low, have been compelled to suspend operations until they can get a supply of raw material. Undoubtedly consumption is ahead of production in pig metal.

Southern Pig Iron.—Every furnace in Alabama started or is preparing to start; prices have further advanced. All grades are higher and tending upward. Some 5,000 coal miners have received the third advance since June; this speaks well for the South and shows that the men engaged in the iron and coal trade understand their business and are bound to make it a success. Every furnace in and around Pittsburg is running to their full capacity. There is no trouble in selling iron and steel; there is, however, considerable in obtaining the same.

Finished Iron and Steel.—Here, too, practically the same conditions prevail, most of the mills being not only oversold, but away behind with their deliveries. The railroads are purchasing rails more freely, markedly in the West, as they have recovered about half their lost ground as far as earnings are concerned. Chicago is credited with purchasing lots aggregating 45,000 tons rails.

The Latest.—Dealers are excited and prices still tending upward; Bessemer sales are larger; top price at Pittsburg, $17.65; Valley, $17—September to January. Steel billets show highest sales last week, $24; present week, $25.15. Demand exceeds the supply. Muck bar advanced. Blooms, billets, bar ends are higher. Ferro-Manganese is held for more money. Steel wire rods are 50c. higher. Sheet and bar advanced, while skelp iron and steel are also selling at higher prices. Old material and old rails away up. Steel wire nails advanced 20c. a keg. It is reported that the Bar Iron Association advanced bar iron $2 per ton. Structural material is booming. The Carnegie Company is refusing orders for delivery within three months, and has contracts aggregating close to 1,000,000 tons of structural material; much of which is for delivery next year. The present production is certainly very remarkable. The Homestead beam mill is the largest in the world; has a capacity of 6,000 tons weekly, enough to build two buildings of 15 stories. Jones & Laughlin comes next, have all the contracts they want for the balance of the year.

COKE, SMELTED LAKE AND NATIVE ORE.

Tons.		Cash.
10,000	Bessemer, Sept. to March inclusive, Valley	$17.00
6,000	Bessemer, Sept., Oct., Nov., Dec., Valley	16.85
5,000	Bessemer, Sept., Oct., Nov ,Dec., Pittsburg	17.50
3.500	Bessemer, Sept., Oct., Valley	16.25
2,000	Bessemer, Oct., Nov., Dec., Valley	15.75
2,000	Bessemer, Nov., Dec., Pittsburg	17.00
2,000	Gray Forge, Sept., Oct., Nov., Pittsburg	12.75
2,000	Gray Forge, Oct., Nov., Dec., Pittsburg	12.75
2,000	Gray Forge, Sept., Pittsburg	12.75
2,000	Bessemer, Oct., Nov., Pittsburg	17.25
2,000	Gray Forge, Sept., Oct., Nov., Valley	12.50
1,500	Bessemer, Sept., Pittsburg	17.00
1,000	Bessemer, Sept., Oct., Valley	16.50
1,000	Bessemer, Sept., to Jan., Pittsburg	17.50
1,000	Bessemer, Sept., Valley	16 50
500	No. 1 Foundry, Pittsburg	13.50
500	No. 2 Foundry, Pittsburg	12.90
100	No. 1 Silvery, Pittsburg	14.00
100	No. 2 Silvery, Pittsburg	13.00

CHARCOAL.

1,000	Mill Charcoal	$15.50
350	Cold Blast	24 00
300	No. 2 Foundry	17.25
275	Warm Blast C.C.	22.50
50	Cold Blast	24.00
25	No. 3 Foundry	17.00

BLOOMS, BILLETS AND SLABS AT MILL.

5,000	Billets, Sept., Oct., Valley	$24.00
4,000	Billets, Oct. to Jan., at mill	25.00
1,500	Billets, Sept., at mill	24.00
1,000	Billets, Sept., at mill	24.25
700	Billets, Sept., Wheeling	23.50
5 0	Billets, Sept., at mill	24.25
500	Billets, prompt, at mill	24.50
500	Billets, Oct. to Jan., at mill	25.15

SKELP IRON.

700	Nr'w gr'v'd	$1.55 4 m.
500	Wide gr'vd	1.55 4 m.
500	Sheared	1.75 4 m.

SKELP STEEL.

780	Wide gr'vd	$1.40 4 m.
600	Sheared	1.75 4 m.
500	Nr'w gr'vd	1.40 4 m.

MUCK BAR.

500	Neutral, deliv'd	$23.00

BLOOMS, BILLETS AND BAR ENDS.

700	Bloom and Billet ends, deliv'd	$16.00

FERRO-MANGANESE.

100	80%, deliv'd	$53.80

STEEL WIRE RODS.

2,000	At Makers' Mill	$31.00
1,000	At Makers' Mill	31.50

SHEET BARS

500	At Makers' Mill	$24.00

OLD RAILS.

1,000	Iron Rails, Valley	$19.75
1,000	Steel Rails, Valley	16.00
450	Iron Rails, Valley	19.50
400	Steel Rails, Short, Valley	17.00

SCRAP MATERIAL.

600	No. 1 R.R. Wr'gnt Scrap, gross	$15.00
500	Heavy Steel Scrap, gross	15.75
400	No. 1 Cast Scrap, gross	11.75
300	Old Car Wheels, gross	12.00
250	Iron Axles, net	18.00
200	Cast Borings, gross	7.50

METAL MARKET.

NEW YORK, Friday Evening, Sept. 6, 1895.

Gold and Silver.

Prices of Silver per Ounce Troy.

Sept	St. Ex.	London Pence.	N. Y. Cts.	Value of £1. in $.	Sept.	St. Ex.	London Pence.	N. Y. Cts.	Value of £1. in $.
31	4 90	30¼	66¾	.516	4	4.89⅝	30¼	66⅞	.517
2					5	4.89⅜	30 5/16	67	.518
3	4.89⅞	30⅞	66¾	.516	6	4.89¾	30 5/16	67	.518

The market remains very steady with good commercial demand from China and India. India Council Bills were allotted at 1/16d advance to-day.

The United States Assay Office at New York reports the total receipts of silver at 170,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States ports, July, 1895, and years 1895 and 1894 in coin and bullion:

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
July	$3,867,518	$574,049	$4,814,031	$1,073,583	E. $7,033,917
1895..	39,098,956	26,558,995	28,711,458	5,386,014	E. 35,885,405
1894..	85,150,380	12,857,402	26,928,700	5,542,529	E. 93,684,149

Imports and exports of gold and silver in ores for the seven months to July 31st are reported as below:

	Gold.		Silver.	
	1894.	1895	1894.	1895.
Imports	$417.257	$999.639	$4,097,448	$6,569,482
Exports	19,719	317,529	183,556	36,142
Excess Imports	$397,538	$682,110	$3,913,892	$6,533,340

These imports and exports in ores are not included in the table of exports and imports of coin and bullion given above.

Adding the exports and imports in ores to those in coin and bullion, we have the following statement for the seven months of the present year to July 31st:

	Exports.	Imports.	Excess.
Gold	$39,416,485	$27,558,634	E. $11,857,851
Silver	28,747,600	11,955,496	E. 16,792,104
Total	$68,164,085	$39,514,130	E. $28,649,955

The statement includes all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending September 6th, 1895, and for years from January 1st, 1895, 1894, 1893 and 1892:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$3,479,100	$278,730	$625,635	$122 512	E. $3,763,493
1895..	49,340 328	25,696,869	27,679,486	1,306,728	E. 50,076,217
1894..	×2,427,435	13,922,998	24,852,825	1,156,628	E. 92,201,634
1893..	69,355,316	55,977,789	23,136,279	1,805,501	E. 34,708,302
1892..	5×,694,073	6,530,756	16,145,144	1,388,496	E. 66,>19 965

Most of the gold exported for the week went to London, small amounts only going to France and the West Indies; the silver went to London. The gold imported came from the West Indies; the silver from Mexico and South America. In addition to the actual exports $12,563 in Mexican dollars passed through in transit from Mexico to France.

FINANCIAL NOTES OF THE WEEK.

Business continues to improve steadily, and now that the vacation season is drawing to an end there is every prospect of continued activity. As shown by our market reports generally, the demand for raw material is large and is not intermittent, but steady, showing a growth from week to week which is not speculative but actual. Crop reports continue good, and there is little doubt that the manufacturing activity is justified by the prospect that the purchasing power of the country will be greater during the coming year than it has been for some years past. The improvement in prices is being very generally accompanied by increases in wages, and an encouraging point is that these have not been confined to any one branch of trade.

The speculative markets have been rather dull, and much has been made in them of the gold exports. As we showed last week, these exports have been really less than the production, so that, after making all allowances for the gold used in the industries, the stock in circulation must have increased this year. Moreover, the exports are not likely to continue much longer.

The exports of gold continue on a considerable scale, and $2,800,000 went out on the steamers in the early days of the week. The present prospect is that about $1,800,000 more will go on Saturday's steamers, making $4,600,000 in all for the week. The indications are that this movement will continue for two or three weeks to come, although it is difficult to predict its full extent. Grain and cotton bills are somewhat slow in coming into the exchange market, and the excitement over South African and other gold shares, which has extended from England to France and Germany, has prevented much investment in American securities. The movement in that direction, which many people anticipated, has not been large so far. While there is a demand for the best class of securities, the speculative shares are almost entirely neglected. Thus far the syndicate has continued to make good withdrawals from the Treasury, and to keep the gold reserve up to the $100,000,000 limit by depositing gold in exchange for currency.

There is a popular impression that England is exerting every nerve to draw gold from all parts of the world. At the present time certainly this is far from being the truth. The English financial papers generally are somewhat excited over the present gold shipments from this side, and do not welcome them by any means. The banks are overloaded with specie, and the amount of idle capital is so great that an influx from any quarter is dreaded. This will certainly continue to be the case as long as money is more plentiful than opportunities of investment, and the rates of interest and discount continue at a lower point than was ever known before in financial history.

The statement of the United States Treasury on Thursday, Sept. 5th, shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	August 29.	September 5.	Changes.
Gold	$100,206,634	$99,127,567	D. $1,079,067
Silver	27,937,615	26,830,595	D. 1,107,020
Legal tenders	23,491,804	23,544,073	I. 52,269
Treasury notes, etc.	34,122,541	35,417,954	I. 1,295,413
Total	$185,758,594	$184,920,189	D. $838,405

Government deposits with national banks on the same date amounted to $14,403,883, a decrease of $450,876 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $144,517,280. Against these are held in the Treasury 20,515,518 coined standard silver dollars, and silver bullion purchased at a cost of $124,001,762, making a total of $144,517,280.

The following official statement shows the coinage executed at the Mints of the United States during the month of August:

Denomination.	Pieces.	Value.
Double eagles	91,000	$1,880,000
Eagles	23,000	230,000
Half-eagles	312,440	1,562,200
Total gold	429,440	$3,672,200
Half-dollars	500,000	250,000
Quarter-dollars	1,912,000	478,000
Dimes	200,000	20,000
Total silver	2,612,000	$748 000
Five cents	1,756,000	87,800
One cent	960,000	9,600
Total minor	2,716,060	$97,400
Total coinage	5,757,440	$4,517,600

The largest amount coined was in gold.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending August 31st, gives the following totals, comparisons being made with the corresponding weeks in 1894 and 1893:

	1893.	1894.	1895.
Loans and discounts	$400,169,300	$489,879,900	$513,259 800
Deposits	374 010,100	585,973,900	574,929,900
Circulation	9,911,600	9,784,800	13,355,800
Specie	66,860,500	91,187,800	65,364,200
Legal tenders	25,071,500	121,126,500	117,518,200
Total reserve	$91,935 000	$212,314,300	$182,882 400
Legal requirement	93,502.525	146.493.475	143,757,475
Surplus reserve	*$1,567,525	$65,810,825	$39,124,925

* Deficit.

Changes for the week were increases of $1,583,250 in surplus reserve. $2,776.400 in legal tenders, $1,39[illegible],400 in deposits and $15,800 in circulation; decreases of $272,700 in loans, and $844,300 in specie.

For convenience of comparison, we have grouped together in the table below the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

	Gold.	Silver.	Total.
Asso. Banks of New York	.....	.....	$65,361,200
1894	.....	.....	90,714,700
Bank of England	$208,060,000	.....	208,060,000
1894	199,070,000	.....	199,070,000
Bank of France	409.640,000	$251,820,000	661,460,000
1894	381,2[illegible]0,000	253,035,000	634,2[illegible]5,000
Imp. Bank of Germany	.....	.....	247,840,000
1894	.....	.....	238,320,000
Austro-Hungarian Bank	103,820,000	66,084,000	172 904,000
1894	64,641,000	78,235,000	142,876,000
Netherlands Bank	21,420,000	34.640,000	56,060,000
1894	22,641,000	34,451,000	57,092,000
Belgian National Bank	.....	.....	20,762,000
1894	.....	.....	21,747,000
Bank of Spain	40,021,000	59.527,000	99,548,000
1894	29,717,000	46,673,000	86,390,000
Bank of Italy	60,280,060	10,860,000	71,240,000
1894	.....	.....	.....
Imp. Bank of Russia	351,560,000	54.210,000	405,770,000
1894	.....	.....	.....

The return for the Associated Banks of New York is of date August 31st; all the others are of date September 5th, except the Bank of Italy, whose return is dated July 1st, and the Bank of Russia, July 1st-13th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports its gold only, not considering silver at all. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

In London last week the Parliamentary Bimetallic Committee issued a circular requesting all members of the House of Commons to co-operate in voting at the next session in favor of a resolution for the reform of the currency. A recent question addressed to Mr. A. J. Balfour in Parliament drew out the response that while he was personally in favor of International bimetallism he was not authorized to commit his colleagues in that direction. Parliament has adjourned until November, so that no further action is to be expected at present.

Shipments of silver from London to the East for the year to August 15th are reported by Messrs. Pixley & Abell's circular as below:

	1894.	1895.	Changes.
India	£3,571,515	£2,330,880	D. £1,240,635
China	2,040,873	1,100,767	D. 940,106
The Straits	877,652	512,703	D. 364,949
Total	£6,490,040	£3,944,350	D. £2,545,690

Shipments for the week were £79,300 to Bombay. Receipts were £165,000 in bar silver and £8,000 in Mexican dollars, a total of £173,000, all from New York.

Indian exchange remains about the same. The India Council has apparently resolved not to go below 13¼d. per rupee, and last week all bids below that figure were rejected. Applications, however, both last week and this week were sufficient to enable the Council to dispose of the bills offered—50 lakhs each week—at the price named.

Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

	Bid.	Asked.
Mexican dollars	$0.53¼	$0.53¾
Peruvian soles and Chilean pesos	.48	.50
Victoria sovereigns	4.88	4.92
Twenty francs	3.88	3.91
Twenty marks	4.78	4.82
Spanish 25 pesetas	4.78	4.83

Other Metals.

Copper.—The market has settled down to a period of quietness, and in the finer grades of copper hardly any business has been done. For casting copper, however, a very good demand exists, and a fair business has been doing at from 11½@11⅝, according to brand and delivery. For Lake copper the price remains nominal at 12¼, although a few lots of second hand ingot copper have been sold at 12⅛@12·15. No pressure to sell is noticeable, and most of the companies are entirely out of the market.

Electrolytic copper is held firmly at 11¾@11⅞, delivered terms, but with hardly any near delivery copper available, only limited transactions took place. The good demand for furnace material already reported, continues, and smelters and refiners here as well as abroad are very anxious to secure supplies.

The foreign market has been somewhat irregular, but on the whole prices are well maintained. G. M. Bs. opened on September 2d at £47, afterward eased off to £46 15s., and close at £47 spot, and £47 7s. 6d., three months prompt. For fine copper the consumption is reported as being very large, and full prices are obtainable. Refined and manufactured we quote: English tough, £50 10s.@£50 15s.; best selected, £51 10s.@£51 15s.; strong sheets, £56 15s.@£57; India sheets, £53@£53 10s.; yellow metal, 1¼d.

Copper statistics for the second half of August have decreased 1,200 tons. The exports during the month of August are reported as being 3,913 tons, and are lighter than for a long time past.

Copper Exports.—The exports of copper from the port of New York during the week ending September 6th, 1895, as reported by the New York Metal Exchange, were as follows.

Copper:			
London—Mobile	Wire	15	tons.
Hull—Galileo	Ingots	22	"
Havre—La Champagne	"	100	"
Liverpool—Germanic	Pigs	100	"
Rotterdam—Spaandam	Plates	45	"
Matte:			
Liverpool—Germanic		90	tons.
Swansea—Kansas City		92	"

Exports of copper from Baltimore for the week ending September 6th are reported by our special correspondent as follows:

Copper:			
Liverpool—Sedgmore	491 bars.	56,256	lbs.
Hamburg—Bohemia	1,121 "	224,124	"
" "	138 cakes.	466,587	"
" "	2,843 ingots.	44,800	"

This is a total of 282 long tons of copper, and 182 tons of matte from New York, and of 354 tons of copper from Baltimore; a total of 636 tons of copper and 182 tons of matte exported for the week.

On the other hand, the receipts at New York of copper from European ports amounted to 299 tons, reducing the net exports to 337 tons.

Tin.—Flatness reigned during the early part of the week, and values eased off somewhat, but with good buying on the part of consumers, prices afterward hardened, and values advanced to 14·45@14·55. The deliveries continue to be very satisfactory.

The London market opened at £65, touched £64 15s., and closes at the best at £65 5s.@£65 7s. 6d. and 7s. 6d. more for three months prompt. Tin statistics for the second half of August have decreased 900 tons, and if this movement continues—which is rather likely—from now on up to the end of the year prices may profit.

The monthly statistics of tin show that during August the shipments from the Straits were 3,730 long tons, and from Australia 430 tons. Shipments from Europe to the United States were 2,080 tons, which added to 680 tons shipped from the Straits directly and 100 tons from Australia make a total of 2,860 tons. The total stocks at the close of the month were estimated as follows: London, 14,950 tons; Holland, Banca and Billiton, 4,240 tons; Holland, Straits, 1,447 tons; United States, excluding Pacific ports, 5,753 tons; total, 26,390 tons. Of this total, 18,537 tons were in warehouse, and 7,853 tons afloat.

Lead.—Early in the week a very large business was done from 3·45@3·50, and several thousand tons changed hands; buyers having then covered their wants, and some pressure on the part of refiners having been exercised, prices receded to 3·40@3·45, which are the closing figures. Several export shipments of lead have been made of late, which indicates that prices obtainable abroad are better than those which can be realized over here for material which is refined in bond.

The London market is strong at £11@£11 1s. 3d. for Spanish and 2s. 6d. more for English lead.

The report of the Bureau of Statistics shows that arrivals of foreign lead in the United States for the month of July amounted to 3 838 tons, and that exports during the month were 836 tons. The stock in warehouse on July 31st was 11,683 tons.

For the month of August the statistics compiled by the New York Metal Exchange show that the arrivals at the port of New York were 5,195 tons, of which 3,750 tons came from Mexico, and 1,445 tons

from Europe. The exports of Mexican lead in bond for the month were 100 tons to Europe, and 212 tons to Canada. The stock in bond, August 31st, at New York and nearby ports was 12,114 tons.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: We have to report lead dull and somewhat lower. There were free sellers of all brands to-day at 3·25, while some soft Missouri lead sold as low as 3·20.

Spelter has been rather irregular, and prices are specially depressed on the spot in New York, where some second-hand parcels are offered at low prices. We have in consequence to reduce our quotations to 4·17½@4·20. In the West, however, higher prices are obtainable and the metal is quoted 4·05 St. Louis, which is rather above the parity of the New York market. Consumption continues to be very satisfactory.

The market abroad continues firm with good ordinaries quoted in London at £15 7s. 6d., and specials 2s. 6d. more.

Antimony remains dull at 7¾c. for Cookson's; 7¼c. for Hallett's; 7½c. for U. S. French Star.

Aluminum.—The standing quotations, according to producer's price list, are given below, the three prices named being respectively for small lots, for orders of 100 lbs. or over, and for orders of one ton or over: No. 1 metal, over 98% pure, in ingots ready for rolling, etc., 60c., 58c. and 55c. per lb. No. 1 metal, in ingots for remelting, 55c., 52c. and 50c. per lb. No. 2 metal, over 94%, but less than 98%, in ingots for remelting, 53c., 50c. and 48c. per lb. Rolled sheets, No. 1 metal, 80c.@$4.40 per lb., according to size and thickness. Wire, $1@$2.50 per lb., according to gauge. Tubes, from 14c.@$3.15 per linear foot, according to thickness and diameter. Castings, from 90c. per lb. up, according to pattern and size of order.

Abroad the price is fixed by the Neuhausen Company, which quotes 5 fr. per kilo.—equivalent to 45c. per lb.—at works in Switzerland for small orders; a discount is made on large sales. Quotations in Paris, for large orders, are 5 fr. per kilo. for ingots; 6 fr. per kilo. and upwards for sheets; 10 fr. per kilo for wire, 0·5 mm. and over; 15 fr. per kilo. and upwards for sheets. For small orders the quotations are 6·50@7 fr. per kilo.

Bismuth.—Quotations are nominally $2@$2.50 per lb., according to size of order.

Magnesium.—The maker's prices are as follows, at works in Germany: 27 marks per kilo.—equivalent to $2.94 per lb.—for ingots; 26 marks per kilo. for bars; 36 marks per kilo. for powder, and 38 marks for ribbon and wire. For orders of less than 10 kilos., 1 mark per kilo. must be added for ingots or bars, and 2 marks for wire, etc.

Iridium.—The demand is very small, and only occasional sales are made. The price varies from $25 to $35 per ounce, according to order and quality.

Nickel.—Quotations continue 35@38c. per lb., with little business reported.

In London quotations are 13@13¼d. per lb. In Paris quotations are 4·25@4·50 fr. per kilo. (say 37@44c. per lb.) for pure metal; 2·25@2·75 fr. for a 50% copper-nickel alloy.

Platinum.—Prices are well held. We continue to quote $11.50 per ounce, New York, for large lots, while the London price is 45@46s. per ounce.

For the fiscal year ending June 30th, 1895, the Bureau of Statistics reports imports of platinum (unmanufactured) into the United States at 3,982 lbs. valued at $522,396, against 2,995 lbs., valued at $397,037, for the fiscal year 1893-94.

For chemical ware, best hammered metal, Messrs. Eimer & Amend, New York, furnish the following quotations, the prices given being respectively for orders of over 250 grams; for orders of over 100 grams and less than 250 grams, and for orders of less than 100 grams: Crucibles and dishes 41c., 43c. and 45c. per gram. Wire and foil are 40c., 41c. and 42c. per gram. The current retail price for crucibles is 50c. per gram.

Phosphorus.—Quotations current are 50@52½c. per lb., New York or Philadelphia.

Quicksilver.—Quotations continue steady at $39.25 per flask, New York. The London price is £7 5s. per flask, with £7 3s. 6d.@£7 3s. 9d. quoted from second hands.

Sodium.—In England makers' price is equal to 90@96c. per lb., according to quantity. Occasional sales only are reported here, usually on private terms.

Tungsten.—The following quotations for this metal and its compounds are furnished us by the manufacturers: Tungsten metal (powder) 98% pure, 70c. per lb.; tungstic acid, 45c. per lb.; tungsten salt (tungstate of soda), 30c. per lb. These quotations are for large lots. For ferro-tungsten the quotations for ton lots of the various grades are as follows: 60% metal, 60c. per lb.; 50% alloy, 45c. per lb.; 37% alloy, 33c. per lb. There has been no recent change.

Imports and Exports of Metals.—Imports of metals into this port for the week ending August 31st, as reported by the New York Metal Exchange, were as follows: 60 tons Banca tin from Holland; 400 tons lead from Hull; 325 tons lead from Antwerp; 200 casks antimony from Newcastle; 13,442 boxes tinplates from the United Kingdom.

Exports of metals from the port of New York for the week were: 200 tons pig iron to Liverpool; 18 tons tin scrap to Amsterdam; 6 tons nickel to Havre; 35 tons sulphate of copper to Mexico; 10 tons sulphate of copper to Genoa.

Arrivals at Philadelphia for the week ending August 31st were: 25 tons spiegeleisen, 161 tons ferro-manganese and 1,606 boxes tinplates from Liverpool: 2,335 tons copper ore from Spain; 4,250 tons manganese ore from Poti, Asiatic Russia; 5,800 tons iron ore from Cuba.

Arrivals at Baltimore for the week ending August 31st were: 18,975 boxes tinplate, 100 tons ferro-manganese and 100 tons spiegeleisen from Liverpool; 2,953 tons iron ore from Cuba; 2,951 tons iron pyrites from Spain.

Exports from Baltimore for the week ending September 6th are reported by our special correspondent as follows: 42 bbls., 22,700 lbs., sulphate of copper to Hamburg.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, September 6.

Heavy Chemicals.—There is a better feeling in this market brought about by an improved demand and firmer prices. Caustic soda has been in better request for future delivery and several fair sales are reported. Alkali and carbonated soda ash are both moving more briskly and prices show an upward tendency due to the reports of an agreement among the English makers. Bleaching powder is scarce on the spot and prices are firm.

Shipments of heavy chemicals from England during the first seven months of this year, as compared with the corresponding period of 1894, are as follows, respectively: Bleaching powder, 25,061 tons, as against 21,130 tons; caustic soda, 15,544 tons, as against 10,738 tons; bicarbonate of soda, 413 tons, against 110 tons; crystal carbonate, 776 tons, against 806 tons; sal soda, 3,269 tons against 1,749 tons; salt cake, 8,255 tons against 4,662 tons. Our quotations this week are as follows: Caustic soda, 60%, 2@2·10c. for spot, other tests, futures, 1·95@2·10c. Carbonated soda ash 48%, is ·95@1c.; 58%, ·90@65c.; according to quantity and delivery. Alkali is 90@1c., according to test. Bicarb. is 1·80@2c. for spot. Bleaching powder is $1.85@$1.95. Sal soda, 62½@65c.

Acids.—A fair business for current consumption continues to be reported in acids, and values remain steady though without change. We quote, per 100 lbs. in New York and vicinity, in lots of 50 carboys or more: Acids, acetic, $1.40@$1.65 (in barrels). Muriatic, 18°, 75@85c.; 20°, 90c.@$1.15; nitric, 36°, $3.25@$4; 40°, $4@$4.50; 42°, $4.50@$5.25. Mixed acids according to mixture; oxalic, $7@$7.50. Sulphuric, 60°, 60@70c.; 66°, 70@85c. Blue vitriol is quoted at $3.75@$4.

Brimstone.—The market for Sicilian brimstone is quiet. Quotations for best unmixed seconds are as follows: Shipments, and nearby arrivals, $15.50 @$16. Best thirds are 50@75c. less.

Fertilizing Chemicals.—There is nothing of interest to report of this market. There is a light but steady demand, and several fair sales are reported at unchanged prices. We quote this week: Sulphate of ammonia, gas liquor, $2.65; bone, $2.55. Dried blood high grade, $1.80@$1.85; low grade, $1.60@$1.70, per unit. Azotine, $1.75@$1.85. Concentrated phosphate (30% available phosphoric acid), 70@71½c. per unit. Acid phosphate, 13% to 15%, av. P_2O_5, 57c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%. P_2O_5, 90c. per unit. Acidulated fish scrap, $12, and dried scrap with few or no sales, nominally $21 f. o. b. fish factory. Tankage, high grade, $19@$2); low grade, $18@$19. Bone tankage, $21; ground bone, $19@$20. Bone meal, $21 @$22.

In lots of 50 tons on contracts we quote, per 100 lbs.: Double manure salts, 48-53% (basis of 48%): New York, Boston and Montreal, $1.10; Philadelphia and Norfolk, $1.12½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.15. Sulphate of potash, 90%, and minimum, 96% respectively (basis of 90%): New York, Boston and Montreal, $2.08@$2.09; Philadelphia and Norfolk, $2.10½, Charleston, Savannah, Wilmington, N. C., and New Orleans, $2.13.

Muriate of Potash.—Quotations for lots of 50 tons are as follows: 80·85% and minimum 95%, respectively (basis of 80%): New York, Boston and Montreal, $1.78; Philadelphia and Norfolk, $1.80½; Charleston Savannah, Wilmington, N. C., and New Orleans, $1.83.

Kainit.—Prices for kainit (minimum 23%) are as follows for invoice and actual weights respectively: New York, Boston and Philadelphia, $8.80; Norfolk, $9.15; Charleston, Savannah, Wilmington, N. C., and New Orleans, $9 55.

Nitrate of Soda.—We quote $1 70@$1.72½. Shipments are held at $1 75@$1.77½ according to position.

Liverpool. Aug. 27.

(Special Correspondence of Joseph P. Brunner & Co.)

It is reported that the negotiations between the English ammonia soda makers, which were broken off recently, have been resumed again, and it is anticipated that this time the differences will be smoothed over and a working arrangement definitely arranged. The talk is that a settlement is likely to be come to within a few days, but, in the meantime, although makers are not absolutely offering beyond the end of this year, they are prepared to do business over 1896 on the basis of spot prices. There is not a great deal going on, however, and as regards spot prices the position may be said to be practically unchanged.

Soda ash is in moderate demand. For tierces, nearest spot range is about: Leblanc ash, 48%, £3 10s. @£3 15s.; 58%, £3 15s.@£4. Ammonia ash, 48%, £3@ £3 5s.; 58%, £3 5s.@£3 10s. per ton net cash. Bags 5s. per ton less. Soda crystals are not active, but prices steady at £2 2s. 6d.@£2 5s. per ton less 5% for barrels.

Caustic Soda is steady, without much actual business reported. We quote: 60%, £6 5s.@£6 10s.; 70%, £7 5s.@£7 10s.; 74%, £8 5s.@£8 10s.; 76%, £9 5s.@£9 10s. per ton, net cash.

Bleaching powder is firm for hardwood, quotations ranging from £7@£7 5s. per ton net cash, according to export market. Outside brands are scarce, and it is reported that £7 5s. up to £7 7s. 6d. has been recently paid on American orders.

Chlorate of potash hangs fire and in the absence of business quotations are nominal at about 4¼d.@ 4¾d. per lb. Bicarb. Soda is unchanged, and the finest quality in 1 cwt. kegs is held for £6 15s. per ton, less 2½%, with usual allowances for larger packages.

Sulphate of ammonia is without improvement, and for good gray 24 and 25% in double bags f. o. b. here the range may be called about £9 12s. 6d.@ £9 17s. 6d. per ton, less 2½%, according to quality. Nitrate of soda is dull at £8 5s.@£8 10s. per ton, less 2½% for double bags f. o. b. here, as to quality and quantity. Carb. ammonia, lump, 3½d. per lb.; powdered, 3¾d. per lb., less 2½%.

MINING STOCKS.

Complete quotations will be found on pages 238 and 239 of mining stocks listed and dealt in at:

New York.	Colorado Springs.	Paris, France.
Boston.	Duluth, Minn.	Mexico.
Philadelphia.	Helena, Mont.	Shanghai, China.
N. Y. Coal Stocks.	N. Y. Industrials.	Valparaiso, Chile.
Denver, Colo.	Salt Lake, Utah.	
Aspen, Colo.	London, England.	

NEW YORK, Friday Evening, Sept. 6.

There has been a somewhat improved demand for certain shares, but on the whole the mining stock market has been as dull as ever.

The Comstocks are without any change of importance. Consolidated California & Virginia was very quiet, only 150 shares being sold at $2.90. Comstock Tunnel continues to show fair transactions numerically; of the common stock 5,000 shares were sold this week at 8@9c., and $2,000 of the bonds changed hands at 11%. There was a solitary transaction of 100 shares of Best & Belcher at $1.05, and another of an equal number of shares of Mexican at 73c.

The only California stock traded in during the week was Brunswick Consolidated, which, considering the assessment, has ruled quite firm. The price was steady at 7@8c., and according to the official sales-list 6,900 shares were sold, though we know of one broker whose aggregate sales exceed this number by 3,000 shares. At a meeting of the board of directors of the Brunswick Consolidated Gold Mining Company held at San Francisco on August 29th assessment No. 9 of 2c. per share was levied upon the capital stock of the company, payable immediately at the office of the company, Nevada Block, San Francisco, or to the treasurer, J. J. Halpin, No. 57 Broadway, New York City. Any stock upon which this assessment shall remain unpaid in San Francisco, on September 30th, will be delinquent and will be sold on October 30th.

Of the Colorado shares the most active was Leadville Consolidated, of which 5,500 shares changed hands at 14@15c. Lacrosse was rather quiet, only 400 shares being sold at 16c. Adams again shows a sale of 400 shares at 20c. Mollie Gibson returns to the exchange this week with a sale of 100 shares at 72c.

The general manager of the Isabella Gold Mining Company writes us from Cripple Creek, under date of September 1st, that the August output of the company was 573 tons of ore, containing 1,479 oz. of gold. The main shaft on the Buena Vista is now down to the 5th level, and shows a foot of ore running from 1 to 9 oz. The stopes on the 2d level are furnishing their usual quota of ore.

The new stopes on the third and fourth levels are giving high-grade ore. The second level, 1,460 ft. long on the vein, after passing through 100 ft. of poor ground, has struck a new chute of ore running from 1 to 4 oz. and 16 in. thick. The third level south is now in good ore, and under the big stopes on the second level the second steam hoist is now running on the Emma shaft. The last car from this opening ran 3½ oz. It is 800 ft. from the Buena Vista shaft. Preparations for the erection of a third hoist are being made at the Smuggled shaft, 1,500 ft. in the opposite direction.

The Ontario Mining Company, of Park City, Utah, shipped last week 46 bars of bullion, containing 21,836 oz. of fine silver. This company's bullion is all shipped to San Francisco.

Boston. Sept. 5.

(From Our Special Correspondent.)

The market for copper shares the past week has ruled extremely dull in comparison with the activity of the past six weeks, and prices have been very irregular, at times quite strong and then weak. The speculative fever seems to be over to some extent, but it is likely to break out again on any advance in ingot copper. Boston & Montana declined to $89¼ early in the week, but later was quite stong, and to-day sold up to $94¼. The advance was lost in part, and closing sales were at $92½. Butte &

Boston is extremely dull and inactive. There seems to be no effort made to advance the price, and it drags along at $21@$22½, with very few sales.

Calumet & Hecla was strong on the probability of at least $20 in dividends this year. A dividend of $5 was declared (payable October 18th) being the third for the year; the last one was paid on August 19th making a total to date of $43,850,000. The stock advanced from $310 to $318, and closed at $316. Quincy sold in a small way at $148@$150, and the scrip at $86@$82. Tamarack was neglected, but steady at $160. Tamarack, Jr., advanced from $25 to $28¼, with a good buying demand, said to come from the Lake. Atlantic sold at $24@$25. Kearsarge at $21@$21¾. Osceola was firmer, with sales, at $37 and $38. Franklin was not quoted. Wolverine touched $9 declined to $8⅛, and closed at $8¾. Tecumseh has been in good demand the past few days, and sales are reported at $4@$4½. The company is about to resume operations with good prospects of success. Centennial is dull at $2. Arnold sold at $3¼@$3½, and Allouez at $1.

Bonanza sold at 60c., and declined to 50c.

The gold stocks seem to be neglected just now, but prices hold firm, Santa Ysabel sold at $13¼@$14½; Merced at $43@$44; Pioneer is unquoted.

Colorado Springs.

BY TELEGRAPH.

Messrs. Gardner & Co. wire us the closing quotations for the week ending September 5th as follows:

Name of Company.	30	31	2*	3	4	5
Anaconda	.73	.72	.....	.70	.70	69
Argentum-Juniata	.77	.77½	.....	.77½	.76½	.76½
Consolidated	1.8½	.18	.....	.17	.16⅝	.17
Isabella	.26⅝	.26½	.....	.26	.27	.20½
Mollie Gibson	.72	.70	.....	.68	.63	.63
Portland	1.90	1.82	.....	1.80	1.80	1.79
Union	.20⅝	.20⅝	.....	.20½	.21	.22

* Holiday.

Salt Lake City, Utah. Aug. 31.

(Special Report of James A. Pollock.)

The mining share market this week was not particularly active, but as a whole it presented a remarkably strong undertone. The fact is patent to every one capable of judging that the public is holding on to all its securities, and shows that steady confidence which is sure to culminate in an exciting speculative advance. The market may appear to be drifting, and drifting slowly, but the movement, when once started, will be intense in character.

Ajax declined under limited offerings and the rumor of an assessment being levied. Alliance was very quiet and there were no sales reported. There is an occasional desultory bid for Anchor, but transactions are rare and the stock seems to have all but dropped out of the market. Bogan is in a sea of troubles and the minority stockholders seem to have the best of the legal fight in which the company is involved. Bullion Beck is enjoying a period of rest. I understand that the mills are not working quite satisfactorily and the values are not being saved to as high a percentage as was expected and is desired.

Centennial Eureka will probably pay an extra dividend on September 2d. The stock is not moving to any extent, only an occasional sale being reported. Comstock reports continue flattering. An examination of the mine is now being made by two well-known experts, and the result of their investigation will be duly chronicled. Dalton has not moved for some months. Daly was strong on the market and I look for it to go much higher. The treasury of the company is reported to hold about $400,000 Daly West was active and some heavy sales were made. The new mill is progressing nicely and should be in full operation by the first of the coming year. Horn Silver is sending in its usual quota of ore, but there is little or no movements in the shares. I look for the usual quarterly dividend to be paid October 1st. Lucky Bill is in demand by small investors.

There has been, and still is, excellent buying of Mommoth. No reason exists why the stock should not sell much higher, the physical condition of the property being excellent, and the financial improving right along. The earnings for the past few months have been very gratifying, and will probably show an increase in the net as the mill is more economically operated. To take profits some holders have been selling Mercur. These sales, however, have but little or no effect upon the price, as stock has been taken in by strong parties who believe in higher prices. The advance that I have so long been predicting in Ontario came this week. The shares were in strong demand, rapidly rising to $9 bid and $12.50 asked. Silver King is at its best. There is less stock upon the market than could be desired, and I do not anticipate that much will come out at present prices. The dividend is payable on September 7th. Tetro is steadily improving under developments.

San Francisco. Aug. 31.

While the market has shown comparatively few fluctuations this week, and is thus strong from a broker's point of view, there has really been very little done, and the absence of buying orders is not all comforting. We read with envy of the activity at Colorado Springs, and some of us cannot account for it. It has occurred to others, however, that the Colorado Springs people have really something to sell, something new and tangible to offer, which people can buy with an expectation of results. If we would stop our manipulation of old and worn out goods perhaps we might show as good a record. I do not know how many of our stockbrokers are prepared to accept this view, but it certainly seems reasonable.

Closing quotations were fairly strong, Consolidated California & Virginia selling at $2.80@$2.85; Hale & Norcross. $1.77@$1.80: Ophir, $1.60@$1.65; Best & Belcher, $1.05@$1.10; Mexican, 68@70c; Savage, 43@45c. Sales are reported of Bodie Consolidated at 13@15c., and of Mono at 14c.

The annual meeting of the Gray Eagle Mining Company has been called for September 18th.

The water in the Carson river is daily becoming less, and in a few weeks there will not be enough to run the Mexican, Brunswick and other mills, which are operated by water-power. The Morgan mill, which crushes ore from the Consolidated California & Virginia mine, is run by steam power, and will therefore not have to stop.

BY TELEGRAPH.

SAN FRANCISCO, Cal., Sept. 6.—The opening quotations to-day were as follows: Best & Belcher, $1; Bodie, 12c.; Bulwer, 7c.; Chollar, 60c.; Consolidated California & Virginia, $2.60; Eureka Consolidated, 20c.; Gould & Curry, 53c.; Hale & Norcross, $1.60; Mexican, 68c.; Mono, 13c.; Ophir, $1.55; Savage, 40c.; Sierra Nevada, 77c.; Union Consolidated, 57c.; Yellow Jacket, 42c.

Paris. Aug. 25.

(From Our Special Correspondent.)

While the South African gold stocks have seemed to dominate the market for the past two weeks, there have been in reality two or three other currents of speculation which have been sufficiently strong, and have given a chance for no small amount of buying.

In spite of the continued rise of prices here and in London, and the fact that at present quotations the Transvaal companies' shares offer returns that seem very small for speculative securities, we continue to buy heavily in all directions. The shares of the so called banks, or trusts, which invest their capitals in stocks of the mining companies, are special favorites. Our investors argue that in these concerns the risks are diminished, and that a bad purchase may be balanced by a good one and losses covered, as they could hardly be by an individual buyer on a small scale. Hence, they say, a trust stock is safer for the small investor.

Perhaps. But one should be very sure as to the management of the trust.

The strongest current of buying, outside of the gold stocks, has been in the copper companies' shares. They are all strong and active, with definite increases in price. It would seem that the rise in the price of the metal is not temporary and fugitive merely, but will probably last. The new demand for electrical work and the fact that your exportations will be smaller—evidenced by the recent reshipments from London to New York—seem to prove that there will not be any such over supply as would be likely to reduce prices.

The lead and zinc companies' shares are also strong, though the rise is not as marked as in copper. The iron and coal stocks and the metallurgical shares have held their own well, but with no special demand.

The second of the two notable buying movements to which I referred above is in Russian stocks. There is a strong demand and heavy buying, most shown this week in Sosnowicz, Dombrowa and South Russian Coal Mines; all of these are higher and in demand. I hear also of new enterprises projected in Russian coal, iron and gold mines. Berlin is also taking an interest in the same direction. It may be that we are to see a speculation in the mines of the Oural, the Amour and the Trans-Baikal, which will match the South African craze.

You may ask why we must go abroad, to Africa and Asia, to invest. It is strange, perhaps; but what will you have? Our banks are loaded down with idle money, and it must find an outlet. Why not to Russia, where there are certainly opportunities for investment?

The foreign commerce of France for the seven months ending July 31st is reported by the Ministry of Commerce as follows:

Imports:				
Food	Fr.	715,863,000	Fr.	547,780,000
Raw materials		1,321,136,000		1,241,385,000
Manufactures		318,646,000		323,798,000
Total imports	Fr.	2,355,645,000	Fr.	2,112,963,000
Exports:				
Food	Fr.	361,015,000	Fr.	332,441,000
Raw materials		418,396,000		489,040,000
Manufactures		894,461,000		993,709,000
Postal parcels		46,307,000		67,184,000
Total exports	Fr.	1,720,179,000	Fr.	1,882,374,000
Excess, imports	Fr.	635,466,000	Fr.	230,589,000

Politically, matters may be called quiet just at present, though disturbing rumors continue to be circulated about Russia and Japan in the far East and about the possible action of England against Turkey in the deplorable Armenian business. It is not possible, however, that our grasping neighbor will be permitted to make of Asiatic Turkey a second Egypt. Russia and France would forbid. AZOTE.

[Our correspondent has from time to time noted the fluctuations, generally in a downward direction, of the shares of the Societe le Nickel, and has also noted the rumors upon which the fall was based. While these reports have been generally circulated among the dealers on the Paris Bourse, we have recently been informed on unimpeachable authority that they have not been justified by the facts. The true condition of affairs, according to our informant, is that the company has very large stocks of nickel ores on hand, sufficient to enable it to carry on business at the refining works in Europe for at least three years to come without mining another ton of ore. In addition to this an agreement still exists between the Societe le Nickel and the French Government according to which the latter guarantees the work of the prisoners in New Caledonia to the company for at least three years; and a much larger territory is being worked now than heretofore. The management of the concern is in competent hands, and our information also states that great improvements have recently been made in all directions, so that the parties in control look forward to a much more prosperous period in the affairs of the company than has existed for two years past.—EDITOR E. & M. J.]

MEETINGS.

Grant Gold mine, annual meeting, at the office, 65 Chronicle Building, San Francisco, September 9th, at 11 a. m.

DIVIDENDS.

Calumet & Hecla Mining Company, dividend of $5 per share, payable October 18th to stockholders of record on October 1st.

ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dinq.	Sale.	Amt
Belcher	Nev.	51	Aug. 20	Sept. 10	.25
Evening Star	Cal.	19	Sept. 10	" 27	.01
California	"	9	Aug. 31	" 21	.01
Con. Imperial	Nev.	33	Sept. 12	Oct. 3	.01
Bullion	"	5	" 5	" 7	.10
Gould & Curry	"	76	Aug. 7	Sept. 28	.15
Gray Eagle	Cal	40	July 12	" 9	.05
Hale & Norcross	Nev.	107	" 3	" 25	.25
Kentuck Con	"	11	Sept. 10	Oct. 1	.10
Kimberly	S. D.	7	" 10	" 1	.002
Mono	Cal.	35	" 15	Sept. 10	.10
New Tintic	Utah		" 10	" 30	.50
Osborn Hill	"	5	" 8	" 29	.25
Reward	Cal.	10	" 27	" 13	.02
San Vicente	Mex.	4	" 7	Oct. 5	.12½
Sierra Nevada	Nev.	109	" 30	Sept. 23	.25
South Eureka	"	19	" 24	" 23	.40
Taylor, H. P.	"		May 31	" 26	.20
Union, Con.	"	51	July 22	" 15	.20
U. S. Grant	S. Dak.	6	Aug. 3	" 22	.00¼

DIVIDENDS PAID BY MINING COMPANIES AUGUST AND YEAR 1895.

NAME OF COMPANY.	Location.	Paid in August.	Paid in since Jan. 1.
Am. Dev. & Mg. Co.	Mont.		$24,340
Alaska-Mexican	Alaska		25,500
Alaska-Treadwell	"		150,000
Amethyst	Colo.		36,000
Bald Butte	Mont.		12,500
Bangkok-Cora Belle	Colo.	$6,000	48,000
Belden, F. E. Mica	N. H.	4,000	34,000
Boston & Montana	Mont.		300,000
Bullion-Beck & Champion	Utah.		275,000
Calumet & Hecla	Mich.	500,000	1,000,000
Centennial-Eureka	Utah.	30,000	240,000
Champion	Cal.	3,400	27,200
Con. Cal & Va	Nev.		162,000
Copper Queen Con.	Ariz.		150,000
Coptis	Nev		1,000
De Lamar	Idaho.	160,000	444,000
Elkhorn	Mont.		50,000
Elkton	Colo.		7,500
Forepaugh	"		16,000
Gold & Globe	"		11,250
Golden Fleece	"	6,000	48,000
Hecla Con	Mont.	15,000	115,000
Homestake	So. Dak.		218,750
Hope of St. Louis	Mont.		10,000
Horn Silver	Utah		110,000
Iron Mountain	Mont.	10,000	90,000
Jackson	Cal.		2,000
Kennedy	"	48,000	184,000
Mayflower Gravel	"	6,000	48,000
Mercur	Utah	25,000	150,000
Mollie Gibson	Colo.		50,000
Montana, Ltd	Mont.		82,500
Mont. Ore Purchasing Co.	"		120,000
Morning Star Drift	Cal.	16,800	134,400
Moulton	Mont.		30,000
Mt. Rosa	Colo.		5,000
Napa Con. (Quicksilver)	Cal.		70,000
Nugget	Colo.		5,000
Osceola Con	Mich.		100,000
Portland	Colo.		120,000
Quincy	Mich.	200,000	600,000
Silver King	Utah.	37,500	112,500
Smuggler	Colo		350,000
Standard	Cal.		30,000
Tamarack	Mich.		200,000
Union	Colo		12,500
Utah	Utah.	1,000	11,000
Victor	Colo.	20,000	180,000
Victor L. & M. Co.	"		6,000
War Eagle	B. C.	50,000	132,500
W. Y. O. D.	Cal.	3,000	24,000
Total		$1,081,700	$6,365,440

Readers of the "Engineering and Mining Journal" will confer a favor on the publishers if they will notify the "Journal" of any errors or omissions in the above table.

STOCK QUOTATIONS.

NEW YORK.*

NAME OF COMPANY.	Location.	Par val.	Aug. 31. H.	Aug. 31. L.	Sept. 2.† H.	Sept. 2.† L.	Sept. 3. H.	Sept. 3. L.	Sept. 4. H.	Sept. 4. L.	Sept. 5 H.	Sept. 5 L.	Sept. 6. H.	Sept. 6. L.	Sales.
Adams	Colo.	10					.20								400
West & Belcher	"	100	1.05												100
Bost. & Mont.	Mont.	25													
Brunswick	Cal.	2							.08	.07	.08		.08		6,900
Bullion	Nev														
Bulwer	Nev.	10													
Challar	"	100	.65												100
Comstock scrip	"	100													
do. T. bonds	"		.11												2,000
do. T. stock	"	50							.03	.08					5,000
Con. Cal. & Va.	"	100	2.90												150
Daly	Utah.	20													
Father de Smet	S. D.	100													
Excelsior	Cal.	10													
Gould & Curry	Nev.	100													
Hale & Norcross	"	100													
Homestake	S. Dak.	100													
Horn Silver	Utah.	25													
Iron Silver	Colo.	100													
King & Pemb		10													
Lacrosse	Colo.	10							.16						400
Leadville	"	10	.14				.15						.14		5,500
Little Chief	"	50													
Mexican	Nev.	10	.73												100
Mollie Gibson	Colo	5							.65						100
Ontario	Utah.	100	.10												20
Phoenix of Ariz	Ariz	100													
Potosi	Nev.	10													
Quicksilver Con	Cal.														
Savage	Nev.	100													
Standard Con	Cal	20													
Tamarack	Mich.	100													
Union Con	Nev.	25													
Victor	Colo.	100													
Yellow Jacket	Nev.	5													

* Official quotations N. Y. and Con. Stock and Petroleum Exchanges. † Holiday.
Total shares sold, 20,750.

BOSTON, MASS.*

NAME OF COMPANY.	Location.	Par val.	Aug. 30. H.	Aug. 30. L.	Aug. 31. H.	Aug. 31. L.	Sept. 2.† H.	Sept. 2.† L.	Sept. 3. H.	Sept. 3. L.	Sept. 4. H.	Sept. 4. L.	Sep . 5. H	Sep . 5. L.	Sales.
Allouez	Mich.	25							1.00						115
Arnold	"	25			3.25				3.50				3.13		250
Atlantic	"	25	25 00	24.00	25. 0				25.00		25.00		25 00		50
Bonanza	"	10	.60	.55	.50						.50				2,400
Bost. & Mont.	Mont.	25	91.13	89.25	92.25	91.00			93.00	91.75	93.88	92.50	94.00	92.50	12,404
Breece											.25				100
Butte & Bost	Mont	25	21.50	21 00	22.13	22.00			22.50	22.38	22.50	22.00	22.38	22.00	4,055
Cal. & Hecla	Mich.	25	315	313	315				316	315	315		3.19	3.16	169
Catalpa	Colo.	10													
Centennial	Mich.	100			2.00				2.00						200
Copper Falls	"	25													
Dominion Coal	N. S.	100	16.25	16.00	5 63				16.00		16.13	15.75	16.00	15.88	835
do. pref.	"	25	96.50								99.0		99.00		59
Franklin	Mich.	25													
Kearsarge	"	25			21.00						21.50	21.00	21.63		500
Merced	Cal														
Osceola	Mich.	25	37.00								38.00	37.50			360
Quincy	"	25	150	148							150		150		183
do. scrip	"		82.50								80.00				20
Santa Ysabel	Cal.	5									13 50	13 25			150
Tamarack	Mich.	25							160		160		167		218
Tamarack, Jr.	"	25	27.50	25.2	27.00				28 25	27.00	28.00	27.50	28.00		3,590
Tamarack, scrip	"														
Tecumseh	"										4.00	3 00	4.13	4.00	1,310
Wolverine	"	25	9.00	8.63							8.50		8.75	8.63	2,480

* Official quotations Boston Stock Exchange. †Holiday. Total shares sold, 29,958.

COLORADO SPRINGS MINING STOCKS.*

NAME OF COMPANY.‡	Par val	Aug. 19. H.	Aug. 19. L.	Aug. 20. H.	Aug. 20. L.	Aug. 21 H.	Aug. 21 L.	Aug. 22. H.	Aug. 22. L.	Aug . H.	Aug . L.	Aug.24 . H.	Aug.24 . L.	Sales.
Alamo	$1	.04¾	.04	.04½	.04½	.04½	.04⅞			.05	.04½	.04½	.01½	13,600
Anaconda	5	.50	.49½	.50	.51	.50	.49	.50	.50	.52½	.01½	.55	.51½	22,700
Argentum J	2	.95	.81	.75½	.74	.80	.79			.83⅛	.83	.80	.80	31,450
Bob Lee	1	01	.0085	.01	.01	.0	0.95	.01	.01	.01	.01			83,5 0
Cripple C.	1	.14¾	.12	.14¾	.14¼	.16¾	.14¾	.17	.16¾	.19½	.16¾	.19¼	.18¾	245,750
C. O. D	1													
Cr. & C. C	1	.03¾	.03	.03¼	.03	.03¼	.03½	.03¼	.03½	.03½	.03¼			82,000
Fanny R	1									.07⅝	.07¼			5 0 0
Franklin	1	.07	.07			.070	.070							22,700
Gold & Gl	1	.14	.13¾	.14⅜	.13⅝	.14	.14	.14	.14	.14	.14			2,500
Isabella	1	.22½	.22	.23	.22½	.23½	.23	.23½	.23½	.24½	.23¼	.25	.24½	47,767
Mollie G	5	.66	.65	.65¼	.66	.64	.63			.63	.69	.59	.59	11,167
Mt. Rosa	1	.10¾	.10	.10½	.10	.10	.10	.10	.10	.10	.09¾	.09¾	.09½	37,8 0
Pharmacist	1	.05⅝	.04⅝	.04⅝	.04¾	.05	.05			.05½	.05	.05	.04¾	99,000
Portland	1	1.96	1.75	1.96	1.90	1.92½	1.90			1.90	1.90	1.96	1.95	24,350
Specimen	1	.15	.14			.14½	.14			.13¾	.13¾			80,0 0
Summit	1	.11	.10	.10¾	.10¾							.11¾	.11¾	4,1 0
Union	1	.29½	.29	.29¼	.24¾	.28	.27½	.28¾	.25¾	.27	.26	.26¾	.25¾	78,000
Work	1	.06⅝	.06¼	.06¼	.06⅝	.06¾	.06¾	.06⅝	.06¾	.06¼	.06¼	.06¼	.06¼	25,700

* Official quotations Colorado Springs Mining Stock Association ‡ All the companies are located in Colorado. Total sales, listed, 820,217; unlisted, 479,833.

COLORADO SPRINGS, COLO.*

NAME OF COMPANY.†	Par val	Aug. 26. B.	Aug. 26. A.	Aug. 27. B.	Aug. 27. A.	Aug 28. B	Aug 28. A.	Aug. 29. B.	Aug. 29. A.	Aug. 30. B.	Aug. 30. A.	Aug. 31. B.	Aug. 31. A.	Sales.
Acia	$1	.01225	.014	.013	.014	.01⅝	.02	.0 ⅜	.013¾	.013¼	.019⅛	.01⅜	.019⅛	48,500
Anaconda	5	.76	.77½	.81	.82	.66	.74¾	.065⅛	.78	.74⅛	.75	.00⅝	.73	2,2 0
Anchoria-L	1	1.02½		1.00	1.50		1.25	1.0	1.10	1.0		1.0		400
Argentum J	2			.77	.95	.78	1.00	.78		.80	.82	.78	.80	2,10
Bob Lee	1	.0125	.0185	.01425	0.450	015	.0145	.0130	.01450	.01450	.01⅛	.014	.01⅛	98,000
Ben Hur	1	.07¾	.07⅞			.06⅜	.07⅜	.06⅛	.07¾	.07¼	.07⅛	.07⅛	.07⅝	46,000
Blue Bell	1	.04	.04⅛	.04⅛	.04⅜	.04⅛		.04⅛	.04⅝	.04¼		.04⅛	.04¼	
Buckhorn	1	.03¾	.03¾	.03⅝	.03¾	.0 ½	.03⅝	.03⅝	.03⅝	.03⅝	.03¾	.03⅝	.03½	24,500
Consolid'd	1	.18¾	.19¼	.18⅝	.18¾	.16¾	.16¾	.16¾	.17¼	.18⅜	.18¾	.18	.18¼	87,700
Cr. & C. C.	1	.0 ⅜	.0 ⅝	.03¾	.03⅝	.03⅝	.04⅛	.03⅝	.04⅛	.03⅝	.03⅝	.03⅝	.03½	34,500
Colo.C.& M.	1	.02⅝	.02⅝	.02⅝	.02¾	.02⅝	.02⅝	.02½	.02¾	.02⅝	.02¾	.02⅝	.02¾	51,500
Columbine	1	.02⅜	.02¾	.02⅝	.02¾	.02½	.02⅝	.0 ⅜	.03	.02½	.02⅝	.02½	.02¾	23,000
Copper M	1	.02⅜	.02¾	.02¼	.02¾	.02¼	.02⅜	.02⅜	.02¾	.02¼	.02¼	.02	.02¼	52,000
Enterprise	1	.02¼	.09⅝	.09¼	.09¾									
Eureka		.00725	.010	.008	.010	.008	.010	.009	.010	.008		.00850	.00850	4,000
Fanny R	1	.0 77	0 08	.00725	.08	.00750	.008	.0650	.0675	.00650	.0050	.00650	.00725	21,000
Gold King		.38½	.40	.38	.40	.38	.40		.39	.39	.42	.41	.41⅜	1,45
Gold Eagle	1	.012	.015	.012	.013	.013	.01⅜	.012		.01¼	.01⅜	.014	.01⅜	4,600
Gold & Gl	1	14	.14½	.13¾	.14	.13¾	.14	.13¾	.14	.13	.13⅜	.13⅛	.14	5,150
Gould	1	.0 ⅛	.06¾	.05¾	.06⅛	.06¼	.06¾	.06	.06⅜	.06¼	.06⅛	.06¼	.06¼	86,2 5
Gold Stand	1	.04½		.04⅜		.04			.04	.06¾	.07	.05½		26,000
Golostone	1	.0 85	.0085	008	.00850	.0 850	.009	.0 950	.010	.0 95	.01050	.0 9 0	.00975	113,000
Golden Age	1	.011	.011	.01150	.01175	.01150	.012	.012	.01225	.01275	.13	.012	.012 5	265,00
Gran. Hill	1	.02	.02¼	.02⅛	.02¼	.02½		.02¼	.02⅜	.02	.2		.02⅜	6,5 0
Jack Pot		.05	.0 ¼	.05½	.05⅝	.0 ½	.05¼	.05¾	.06¼	.05¾	.01¼	.05½	.05½	134,25
Keystone	1	.04¾	.5	.04⅞	.05	.04¾	.05	.04⅝	.04¾	.04⅝	.04¾	.04½	.04¾	60,000
Magna Ch	1	.02⅜	.02¼	.02⅜	.02¼	.02⅛	.02⅜	.02	.02½	.02	.2	.02	.02⅜	29,0 0
Mollie G	5	.57	.59	.73	.75	.76	80	.76	.78	.75	.80	.68½	.72	7,750
Mt. Rosa	1	.08¾	.10			.09¾	.10	.09	.09¾	.08¾	.09¾	.09		8,000
Mutual	1	.05	.05½	.05	.05⅜	05	.06	.05¼	.05½	.05¼	.05¼	.05¼	.05¼	20,500
Nugget	1	.11⅝	.11¾	.11⅜	.11⅞	.11⅜	.11⅝	.10⅜	.11⅜	.11⅜	.12	.10	.11¼	11,000
Ophir	1	.05	.06¾	.06	.6¾	.5⅝	.06	.6¼	.07	.05½	.6¼	.05¼	.6½	6,500
OrphanBell	1	.09¼	.1 ⅜	.09¾	.10⅝	.09¾	.10¼	.09½	.09¾	.09¾	.10	.09½	.10	22,8 0
Pharmacist	1	.04⅜	.4¾	.01½	.4⅞	.4¾	.04¾	.04¾	.5¼	.04½	.04¾	.4¼	.04¾	3,50
Portland	1	1.93	2.0	1 92	1.98	1.93	1.95	1 90	1.92	1.86	1.95	1.85	1.95	31,700
Silv. State	1	.2¼	.02¾	.02⅜	.02¾	.2¼	.02¾	.01⅞	.02¾	.02⅜		.2	.02½	170,0 0
Sacram'nto		.06¼	.07	.7	.07¼	.06¾	.06¾	.05⅜	.05⅝	.05⅜	.06	.05⅜	.05¾	506,400
Summit	1	.10¾	.12⅛	.11	.11¼		.11½	.10	.11⅜	.12	.12⅛	.12	.12¼	20,8 0
Santa Fe	10	.00⅝0	.008	.00850	007			.006	.007	.0 9	.01025	009	.00950	69,400
Star of W	1	.08	.0 85	.08	.0 825	.00750	.00850	.008	.00825	.0085		.00825	.00850	20,500
Union	1	.23¾	.26¼	.25	.25½	.24¾	.25½	.23⅝	.24¼	.24½	.24⅝	.23¾	.24	24,920
UnionLeas.	1	.45	.50	.45		.45	.50	.44		.40	.50	.42		
Virginia M.	1	.02	.02¼	.01¾	.02¼	.02	.02½	.02⅛	.02⅜	.02	.02¼	.0 ¾	.02⅛	51,917
World	1	.01¾	.02	.02¾		.02¼		.02⅝	.03	.02¼	.03	.02	.02¼	2,000
Work	1		.06¼	.06¼		.6¼	.06½	.06¼	.7	.06¼	.06¾	.03½	.06¼	8,0 0

* Official quotations Colorado Springs Board of Trade and Mining Exchange. † All the companies are located in Colorado. Total shares sold, listed, 2,415,867; miscellaneous, 1,391,120.

COAL AND COAL RAILROAD STOCKS.*

NAME OF COMPANY.	Par value.	Aug. 31. H.	Aug. 31. L.	Sept 2.† H.	Sept 2.† L.	Sept. 3. H.	Sept. 3. L.	Sept. 4. H.	Sept. 4. L.	Sept. 5. H	Sept. 5. L.	Sept. 6. H.	Sept. 6. L.	Sales
Balt. & Ohio	100	65¾						66	65	66½	65¾	65½	66	1,130
Ches. & Ohio	100	21¾				22	21⅞	22	21⅜	22	21½	21¾	21¼	4,130
Col.C. & I.Dev	100					6		6¼	6	7½	6¾			2,500
Col. Fuel & I.	100					39⅜	38¾	39	38¼	38¾	38			2,465
Col.,H.V.&Tol	100							25	24¾	25¾	25			1,400
do. pref.	100													
Col. & H.Coal	100					4¾	4½	4		3¾				400
Consol. Coal.	100													
Del. & Hud'n	100	131				131½		134¾	131½	134¾	133½	133¾	133¼	11,173
Del., L. & W.	50					163½		167	163	166	165¼	167¼		2,524
Lake Erie&W	100	26½	25¾			27		26¾	26½	26½		26		1,4 9
do. pref.	100	81	80¾			81	80¾	81	80¾	80¾				1,300
Morris & Es'x								165						60
N. J. Central	100	111¾	110			114	112	116⅛	113¾	116	114			14,448
N. Y.,L.E.&W	100	99⅛	98⅜			9½	9	9⅜	9	9⅝	8⅝	9	8¾	6,356
do. pref.	100					25½	25	25½	25	25				1,126
N.Y.,Susq.&W	100	14				14¼	14⅛	14⅜	13¾	4¾	14⅛			4,094
do. pref.	100	35				36	35½	36⅜	35¼	38	35⅛			12,673
Norfolk & W.	50	4¼						4¼						505
do. pref.	50					15⅞	15½	15½	15⅛	15⅛				1,1 0
Phila. & Read.	50	20⅝	19⅝			20½	20	22⅜	20¼	22⅜	21¼	20½	20	25,927
Tenn. C. & I	100	40¾	39½			41	40	42⅜	41	43¼	42	43¼	41¼	256,54
do. pref.	100									96				100
Wheel. & L. E	100	16¾	16			16¾	16¾	16⅝	16¾	16⅝	16¾	16¾	16¾	3,050
do. pref	100	5¾				51¾	5 ¼	51¾		51¾	51¼	51⅝		886

* Official quotations N. Y. Stock Exchange. † Holiday. Total shares sold, 358,895.

INDUSTRIAL AND TRUST STOCKS.*

NAME OF COMPANY.	Par value.	Aug. 31. H.	Aug. 31. L.	Sept. 2.† H.	Sept. 2.† L.	Sept. 3. H.	Sept. 3. L.	Sept. 4. H.	Sept. 4. L.	Sept. 5. H.	Sept. 5. L.	Sept. 6. H.	Sept. 6. L.	Sales
Adams' Exp	100							150						7
Am. Cot.Oil	100							25⅜	24¼	24¼	23½	24	23¾	3,660
do. pref	100	74						74		73	72½	72¾	72⅜	1,56
Am. Exp	100							115		114				85
Am. Sug. Rf.	100	111⅜	110¾			112⅜	110⅞	114¾	112⅜	114⅜	113¼	114¼	112⅜	178803
do. pref	100	104⅜				105		105		104¼		104	103⅜	680
Edison E. Ill	100	99⅜				100¼	99⅝	101¾		101	100½			780
General Elec	100	37¾	37½			38⅜	37⅜	38⅛	38	38½	37⅝	39⅛	37⅜	29,100
Nat Lead	100	36	35⅝			35⅞	36	36⅜	36⅛	35½		35⅜	35¼	2,111
do. pref	100	92	91¾			91¾		91½	91⅜	92½	9 ⅜			75
Nat.Lins.Oil	100	27⅛										27¼	.7	300
U.S.Cordage	100	3⅝						3⅝		3				130
do. pref	100													
do. gtd.	100					13								10
U.S. Express	100									50				214
U. S. Rubber	100	41	40⅝			41½	4 ⅛	40⅝	40⅜	40⅜				1,810
do. pref	100					91⅜	94	94						552
Wells Fargo	100	115												10
West. Union	100	95½	94½			95¾	95	95	94⅛	94¾	94¼	94⅛	93¾	17,674

* Official quotations N. Y. Stock Exchange. † Holiday Total shares sold, 238,381.

HELENA, MONT.* Week ending Aug. 24.

NAME OF COMPANY.	Location.	Company's office	Par value.	Bid.	Asked	Shares sold.	Price	Date.
Am.Dev.&M.Co.	Silv.Bow Co, Mont.	Butte, Mont.	$1	$2.00	$2.50			
Bald Butte	L.& Cl'ke Co., "	Helena "	1	3.50	4.00	700	3.25	Aug. 22
Benton Group	Meagher Co. "	W.Sph. S.Mont	5	.10	.15			
Combination	" " "	" " "	10	.60	.65			
Elkhorn	Jefferson Co. "	London, Eng.	£1	6s. 6d.	7s. 6d.			
Hel'a & Frisco	Shoshone Co , Id.	" "	5	2.00	2.50			
Iron Mountain	Missoula Co., Mont.	" "	10	.72½	.75	4,500	.60-70	Aug.
Ontario	DeerLodgeCo. "	" "	1	1.00	1.20	185,0 0	.75	Aug. 12
Piegan	L. & C. Co., "	Marysville, "	5	.15	.25	5,000	.15	July.
Royal Gold	D'r LodgeCo., Mont	D'r Lodge, "	5	.40	.60			

* Special report of Samuel K. Davis. Total shares sold, 8,000.

ASPEN, COLO.* Week ending Aug. 23

NAME OF COMPANY.	Location.	Par value.	Bid.	Asked	Shrs.s'ld	Price.
Alta Argent	Aspen, Colo.	$1.00	$0.08	$0.09	28,000	$0.09
Argentum-Juniata	" "	2 00	.78	.80	3,000	.80
Aspen Contact	" "	5.00	.24	.25	135	.25
Aspen Deep Mining	" "	1.00	.07	.08	43,500	.08
Best Friend	" "	1.00	.04	.04½	750	.04½
Bi-Metallic	" "	1.00	.02	.02¼		
Bushwhacker	" "	1.00	.05¾	.06	1,500	.06
Caverhill Consolidated	" "	1.00	.20	.20	24,5 0	.20
Delia S.	" "	5.00	.70	.72½	12,5 0	.70
Gold Valley Placer	Routt Co., "	1.00				
Mineral Farm Consolidated	Aspen, "	1.00	.06	.07	15,0 0	.07
Mollie Gibson	" "	5.00	.59	.65	4 0	.65
Old Colony Gold	Taylor River, "	1.00	2.00	2.00	2,000	2.00
Sheep Mt. T. & M	Crystal, "	1.00				
Smuggler	Aspen. "	1.00	1.40	1.45	200	1.45

* Special report of Arkell, MacMillan & Stewart. Total shares sold, 131,185.

DENVER, COLO.* Week ending Aug. 31.

NAME OF COMPANY.	Location.	Par value.	Opening	Highest.	Lowest.	Closing. Bid.	Closing. Ask.	Sales.
Alamo	Cripple Creek, Colo.	$1	.03¾	04¾	04	.03¾	04¼	27,000
Amity	Leadville, "	1	.005½	.008	.007	.005½	.007½	6,000
Anaconda	Cripple Creek, "	5	.64¾	.78	.70	.71	74	51,4 0
Aola	" "	1	0 ½	.02¾	.01½	.01¾	.02¼	90,100
Argentum Juniata	Aspen, "	1	.83	.85	.77	.77	.81	2,900
Adie C	" "		.067	.067	.063¾	.063¾	.067	182,500
Bangkok Cora Bell	Leadville, "	1	.14½	.14¾	.14½	.14½	.14½	13,500
Bankers	" "	1	.04¾	.06¾	.06	.05½	.06¾	116,000
Big Six	" "	1	.07½	.08	.07½	.06½	.07½	6,900
Boston-Idaho	" "		.22	.25	.23½	.23½	.25	100
Cripple Creek Con	Cripple Creek, Colo.	1	.17	.21	.17	.18	.20	8,600
Creed & Cripple Creek	" " "	1	.03½	.04	.03	.03½	.03¾	12,000
Forepaugh	Leadville, "	1	.25	.40	.25	.26	.40	
Garfield Grouse	" "	1	.02¾	.03¾	.02¾	.03¾	.03¾	27,500
Gold Standard			.03½	.09	04	.06	.06¾	68,100
Gold & Globe	Cripple Creek "	1	.13¾	.15	.12½	.112	15	2,000
Isabella	" "	1	.25	.28	.24	.25½	.28	2,300
Justice			.06	.08	.07¼	.07¼	.08	9,300
Mollie Gibson	Aspen, "	5	.59	.76	.60	.60	.70	501
Mt. Rosa	Cripple Creek, "	1	.09	.09¾	.08¾	.08½	.09½	6,100
Pharmacist	" "	1	.04½	.05	.04½	.04	.04¾	12,600
Portland	" "	1	1.75	1.95	1.85	1.72	1.90	
Smuggler	Aspen "	1	1.43				1.40	
Union Con	Leadville, "	1	.24	.25	.22	.21	.25	5,100
Union Leasing	Leadville, "	1	.44	.47	.43	.40	.47	12,3 0
Work	Cripple Creek, "	1	.05	.07	.06	.06¼	.07	51,500

*Clearing House Report, Colorado Mining Stock Exch'ge. Total listed, 955,300; unlisted, 534,000.

ST. LOUIS, MO., STOCKS.

NAME OF COMPANY.	Location of Works.	Company's Office	Par value.	Bid.	Asked.	Last Dividend.
Central Lead Co	Flat River, Mo...	"	$100	$50	$80	....
Con. Coal Co	....	St. Louis	100	20	22	June, '95, 1 p. c.
Doe Run Lead Co	Doe Run, Mo.....	St. Louis....	100	80	100	June, '92, 2 "
Kan. & Tex. Coal	....	....	100	64	64	....
St. Joseph Lead Co	Bonne Terre, Mo.	New York	10	9	10	July, '95 1½, p. c.

PITTSBURG, PA.* Sept. 5.

NAME OF Co.	Par	Sale.	Bid.	Ask.
GAS STOCKS:				
Allegheny	$100	.....	$48½	$50
Chartiers Valley	100	.....	.....	.....
People's Nat. Gas	50	.....	30	.....
People's Nat. Gas and Pipeage	25	13	13	14
Pennsylvania	50	.....	5	.....
Philadelphia	50	17	16⅞	17
Weeling	50	.....	17¾	20
MINING STOCKS:				
Lustre	10	12	10	12

*Official quotations Pittsburg Exchange.

DULUTH, MINN.* Aug. 31.

NAME OF Co.	Par	Price	Bid.	Asked
Adams Iron	$10	.....	$1.00	$5.00
Biwabik I. M.	100	$20.00	20.50	21.00
Clev.Cliffs Iron.	100	.....	38.00	40.00
Great No. M	100	.....	1.75	2.00
Great West. M.	100	.....	1.00	1.50
L. Sup. Con. M.	100	15.00	15.50	16.00
L. Sup.(Marq'te)	25	.....	25.00	.....
Minnesota Iron.	100	66.00	67.50	70.00
Mes. Chief Iron.	100	.....	2.00	2.25
Mountain Iron.	100	48.00	50.00	52.00
Ohio Mining	100	4.00	4.00	5.00

* Official quotations Duluth Exchange.

LONDON. Aug. 17.

Name of Company.	Par value.	Quotations. Buyers	Sellers
AMERICANS:		£ s. d.	£ s. d.
Alaska-Mexican	£1	1 15 0	2 0 0
Alaska Treadwell	5	4 17 6	5 2 6
De Lamar	1	1 1 6	1 2 6
Elkhorn	1	5 6	6 6
Harquahala	1	3 6	3 9
Holcomb Valley	5s.	1 9	2 0
Jay Hawk	£1	1 0	2 0
Montana	1	10 6	11 6
New Guston	1	12 6	15 0
Palmarejo (Mex.)	1	2 9	3 3
Plumas-Eureka	1	8 9	11 3
Poorman	5s.	2 9	3 0
Richmond	£5	17 6	1 2 6
Sierra Buttes	2	8 9	11 3
Springdale	4s.	2 0	2 3
SOUTH AMERICANS:			
Colombian Hydraulic	£1	11 3	13 9
Frontino & Bolivia	1	1 6 3	1 8 9
Tolima, A shares	5	7 15 0	8 5 0
" B "	5	6 15 0	7 5 0
COPPER STOCKS:			
Cape Copper	2	2 2 6	2 5 0
" " preferred	2	2 2 6	2 7 6
Copiapo	2	2 1 3	2 3 9
COPPER STOCKS:			
Rio Tinto	£10	17 16 3	17 18 9
Tharsis	2	4 17 6	5 0 0
AUSTRALIANS:			
Bayley's Reward	1	8 0	9 0
Broken Hill Propriet'ry	8s.	1 17 0	1 18 0
Mt. Morgan Gold	17s. 6d.	2 16 3	2 18 9
INDIANS:			
Champion Reef	£1	4 17 6	5 0 0
Mysore	1	2 13 9	2 16 3
Nundydroog	1	1 18 9	2 1 3
Ooregum	1	3 6 3	3 8 9
" preferred	1	3 16 3	3 18 9
SOUTH AFRICANS:			
British S. Africa Co	1	7 5 0	7 10 0
City & Suburban	4	26 15 0	27 0 0
Crown Reef	1	11 15 0	12 0 0
De BeersCon.(diam'nd)	5	25 1 3	25 3 9
Durban-Roodepoort	1	8 0 0	8 5 0
Ferreira	1	18 0 0	18 10 0
Geldenhuis Estate	1	6 16 3	6 18 9
Jagersfontein (diam'd)	5	9 7 6	9 12 6
Langlaagte Estate	1	6 6 3	6 8 9
New Primrose	1	7 17 6	8 0 0
Robinson	5	10 2 6	10 7 6
Simmer & Jack	1	17 5 0	17 15 0

MEXICO. Week ending Aug. 30.

Name of Company.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Closing.
Amistad y Concordia	Hidalgo	9,600	$3.58		$60	$60
Angustias	Guanajuato	2,400	15.00		1,200	1,200
Asturiana y Anexas	Zacatecas	2,500	10.00		380	380
Cerro Colorado	Chihuahua	15,000		$1.00	15	15
Cinco Senores	Guanajuato	2,000	30.00		1,540	1,520
Concepcion y Anexas	S. Luis Potosi	2,700			325	325
El Oro	Guanajuato	500			80	80
do. pref	"	2,000	2.00		80	80
Huautla Sta. Ana	Morelos	4,000	1.50		100	100
Luz de Berda	Michoacan	3,000		0.50	30	30
do. Free stock	"	1,000			30	30
Luz de Maravillas	Hidalgo	1,100			410	380
Purisima de los Com.	Zacatecas	2,400			70	70
Real del Monte	Hidalgo	2,554	20.00		1,380	1,500
Rosario y Anexas	Durango	4,800			120	120
do. pref	"	2,400			80	90
San Rafael y An	Hidalgo	1,200	32.00		1,780	1,860
do. free stock	"	1,200	20.00		800	810
Sta. Elena Almoloya	"	1,280		0.50	10	10
Sta. Gertr. y Anexas	"	28 800	1.50		74	75
do. free stock	"	9,600	0.87		16	16
Sta. Maria de la Paz	S. Luis Potosi	2,400			380	440
Tlauzinco	Puebla	2,400			40	40
Zaragoza	Hidalgo	1,100			30	30
Zomelahuacan (gold)	Vera Cruz	5,000			100	100
Zona Min. de Pozos	Guanajuato	2,400		1.50	110	120

NOTE.—In most Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Prices are in Mexican dollars.

Philadelphia, Pa.* Sept. 4.

Name of Co.	Par.	Bid.	Ask.	Last sale.
Cambria Iron	$50	$63½		100
do. Allots		12½	$12	330
Hunt & Br. Top	50	31¼		50
do. pref	50			
Lehigh C. & N.	50	50	49	612
Lehigh Valley	50	43¼	42½	12,943
Penn. R. R.	50	57¼	56¾	4,821
Westmorel'd C.	50	51½		10

*Phila. Exchange. Total shares sold, 18,866

Shanghai, China.* July 26.

Name of Co.	Par.	Last div.	Price.
Jelebu Mg	$5	$0.25	T. 2·41
Punjom Mg	4		" 4·02
do. pref.	1		" 1·24
Raub A'lianG.	£1	10½d.	" 3·10
Sheridan Con.	T. 100		" 4·00

* Special Report of J. P. Bissett & Co. Prices quoted are in silver taels.

PARIS. Week ending Aug. 18.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Closing.
			Francs.	Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	100.00	1,925.00	1,955.00
" " Firminy	"	" "	3,000,000	500	85.00	1,526.00	1,526.00
" " Five-Lille	"	" "	12,000,000	500	35.00	620.00	630.00
" " la Marine	"	" "	20,000,000	500	80.00	777.50	780.00
" " Longwy	"	" "		500	35.00	670.00	670.00
" " l'Horme	"	" "		500		16.00	16.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	40.00	345.00	325.00
Anzin	France	Coal			200.30	4,070.00	4,025.00
Boleo	Lower Cal.	Copper		500		1,075.00	1,080.00
Bruay	France	Coal	3,000,000	400	600.00	15,500.00	16,000.00
Callao	Venezuela	Gold	32,200,000	125		15.00	14.75
Cape Copper	S. Africa	Copper		50	1.50	53.12	59.68
Champ d'Or	"	Gold		25		99.00	98.75
Courrieres	France	Coal	60,000	300	150.00	4,135.00	4,150.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	593.87	626.25
Dombrowa	Russia	Coal		500		585.00	585.00
Dourges	France	"		1,000	225.00	6,500.00	6,500.00
Dynamite Centrale	"	Explosives		500	25.00	587.50	595.00
Dynamite Francaise	"	"		500	25.00	740.00	740.00
Epinac	"	Coal		2 500		600.00	600.00
Huanchaca	Bolivia	Silver		125	5.00	162.50	161.25
Jerez-Lanteira	Spain	Copper				6.50	6.50
Kebao	Tonquin	Coal		500		500.00	500.00
Laurium	Greece	Zinc & lead	16,300,000	500	40.00	558.00	556.00
Malfidano	Italy	Zinc	12,500,000	500	52.50	919.00	910.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	37.50	272.50	299.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	780.00	790.00
Nickel	N. Caled'nia	Nickel	12,720,000	500	30.00	171.00	170.00
Penarroya	Spain	Coal, etc.		500	52.50	1,020.00	1,025.00
Pontgibaud	France	Lead, etc.				292.50	290.00
Rio Tinto	Spain	Copper	81,250,000	250	8.00	415.50	441.25
Robinson	S. Africa	Gold		125	12.50	246.00	252.50
Saint Elie	Fr. Guiana	"	4,000,000	25		38.00	37.50
Salines de l'Est	France	Salt		500	27.00	275.00	276.25
Soufres Roumaines	Italy	Sulphur				215.00	217.50
Tharsis	Spain	Copper		50	6.25	116.00	123.00
Vicogne-Noeux	France	Coal			700.00	17,055.00	17,060.00
Vieille Montagne	Belgium	Zinc	9,000,000	80	30.00	463.50	467.00

VALPARAISO, CHILE.* Week ending July 6.

Name of Company.	Capital.	Share value. N'minal.	Paid up.	Last dividend.	Prices. Bid.	Asked.	Last sale
Arturo	$3,300,000	$100	$100	0½ per cent.	$46½	$47	$47
Caracoles	315,000	100	100	5 "		50	
Descub. de Huantajaya	1,000,000	100	100	2 "	34	36	35
Huanchaca de Bolivia	8,000,000	100	100	4 "	92	93	93
Oruro	800,000	1,000	1,000		2,570	2,600	2,600
S. Agustin de Huantajaya	1,500,000	100	100	2½ per cent.	50	55	52½
Todos Santos	2,000,000	100	100	0½ "	22	23	23¾
Nitrate Cos:							
Agua Santa	5,000,000	500	500	6 "	158	159	160
Antofogasta	2,000,000	200	200	10 "	180	185	184
Union	3,000,000	200	100	3 "	80	83	80

* Special Report of Jackson Bros. Values are in Chilean pesos or dollars.

SALT LAKE CITY, UTAH.* Week ending Aug. 31.

Name of Company.†	Par value.	Bid.	Asked.	Actual selling price.	Name of Company.	Par value.	Bid.	Asked.	Actual selling price.
Ajax	$10	$0.20	$0.30	$0.30	Daly	$20	$6.25	$7.00	$6.75
Alliance	1	1.25	1.45	1.40	Daly West	20	6.25	6.75	6.50
Amer. Nat. Gas	10	.15	.30	.25	Horn Silver	25	2.10	2.50	2.35
Anchor	20	3.00	3.35	3.25	Mammoth	25	.95	1.10	1.05
Bogan	1	.15	.40	.25	Mercur	25	4.20	4.25	4.25
Bullion Beck & C.	10	7.00	8.75	8.50	Morgan	125	.50	.75	.65
Cane Springs	5	.50	.85		Ontario	100	9.00	11.00	10.50
Centen'l Eureka	50	51.00	62.00	60.00	Silver King	20	14.50	15.00	14.75
Cleveland Con	1		.50		Tetro	1		.20	.10
Comstock	25	.50	.65	.55	Utah	1	.50	1.00	.75
Dalton	5	.02	.05	.03	Utah Lime	10	3.50	4.25	4.00

* Special report of James A. Pollock. † All the companies are located in Utah.

CURRENT PRICES.

These quotations are for wholesale lots in New York unless otherwise specified.

Acid—Acetic, chem. pure .18@.20
Commercial, in bbls. and cbys. .01¾@.02
Carbonic, liquefied, ℔ lb. .07@.10
Chromic .20
Hydrofluoric .04@.07
Alcohol—95%, ℔ gall. $2.30@$2.40
Absolute $3.80
Alum—Lump, ℔ cwt. $1.60@$1.80
Ground, ℔ cwt. $1.70@$1.90
Lump ℔ ton, Liverpool £4 10s.@£4 17s.
Aluminum Chloride—Pure, ℔ lb. $1.25
Amalgamating solution, ℔ lb. .60
Sulphate, ℔ cwt. $1.25@$1.75
Ammonia—Sal., lump, ℔ lb. .09@.10
Carbonate, ℔ lb., English and German. .08¾@.09¼
Muriate, white, in bbls., ℔ lb. .07@.08
Aqua Ammonia—(in cbys) 8° ℔ lb. .03@.04
20°, ℔ lb. .04@.05
26°, ℔ lb. .04¾@.05
Antimony—Oxymur, ℔ lb. .04@.06
Regulus, ℔ lb. .07@.08
Oxide .18@.25
Argols—Red, powdered, ℔ lb. .15
Arsenic—White, powdered ℔ lb. .03@.03¾
Red ℔ lb. .05½@.06
Yellow .08@.09
White at Plymouth, ℔ ton $12 2 6
Asbestos—American, Salt Mt. $14.50@$20
Canadian $15@$20
Ashes—Pot, 1st sorts, ℔ lb. .04¾@.04¾
Pearl .05½@.06
Asphaltum—
Prime Cuban, ℔ lb. .04@.05
Hard Cuban, ℔ ton $28.00@$30.00
Trinidad, refined, ℔ ton $30.00@$35.00
Egyptian and Syrian, ℔ lb. .05@.07½
Californian, at mine, ℔ ton $12.00@$26.00
at San Francisco, ℔ ton, $15.00@$29.00
Barium—Carbonate, pure precip., ℔ lb. .10
Carbonate, commercial, ℔ lb. .03
Chlorate, crystal, ℔ lb. .25@.30
Chloride, commercial, ℔ lb. .02@.02½
Iodide ℔ oz. .40
Nitrate, ℔ lb. .06¾@.07
Sulph., Am. prime white, ℔ ton $15@$18
Sulph., foreign, floated, ℔ ton $16@$18
Sulph., off color, ℔ ton $10@$11.50
Carb., lump, f. o. b. L'pool, ℔ ton £6
Bauxite—℔ ton $7 @ $8
Bichromate of Potash—Scotch. ℔ lb. .09@.10
American, ℔ lb. .09@.09½
Bichromate of Soda—℔ lb. .08@.09
Borax—Refined, ℔ lb., in car lots .06@.06½
Bromine—℔ lb. .25@.35
Cadmium Minion—℔ lb. $2.00
Cadmium Iodide—℔ lb. $5.00
Chalk—℔ ton $1.50@$2.25
Precipitated, ℔ lb. .04@.05
China Clay—English, ℔ ton $12@$17.00
Domestic, ℔ ton $9@$11
Chlorine liquefied, ℔ .25
Chrome Yellow—℔ lb. .10@.25
Chrome Iron Ore—℔ ton, San Francisco $10.00
Chromalum—Commercial, ℔ lb. .03@.05
Cobalt—Oxide, ℔ lb. $1.40@$1.55
Copper—Sulph. English Wks. ton £20@£21
Vitriol (blue), ℔ lb. .03¾@.04¼
Nitrate, ℔ lb. .25
Copperas—Common, ℔ 100 lbs .50@.65
Best, ℔ 100 lbs. $1.25@$1.50
Liverpool, ℔ ton, in c'aks. £1 11s.@£1 15s.
Corundum—Powdered, ℔ lb. .04¼@.09
Flour, ℔ lb. .03
Cryolite—Pow., ℔ lb., bbl. lots .06¼@.07½
Emery—Grain, ℔ lb. (⅔ kg.) .04½@.05
Flour, ℔ lb. .02½@.04
Epsom Salt—℔ lb. .01@.01½
Feldspar—Ground, ℔ ton $6.00@$10.00
Fluorspar—Powdrd, No. 1, ℔ ton $15@$20
Lump, at mine $6@$8
French Chalk—℔ ton $2.25@$2.30
Fuller's Earth—Lump, ℔ ton $16@$20
Glauber's Salt—in bbls., ℔ cwt. .50@.75
Glass—Ground, ℔ lb. .09@.10
Gold—Chloride, pure, crystals, ℔ oz. $12.00
pure, 15 gr., c. v., ℔ doz. $5.40
liquid, 15 gr., g. a. v., ℔ doz. $5.50
Chloride and sodium, ℔ oz. $6.00
15 gr., c.v., ℔ doz. $2.75
Oxide, ℔ oz. $27.25
Gypsum—Calcined, ℔ bbl. $1.75
Iodine—Resublimed, ℔ lb. $3.50@$4.00
Iridium—Oxide ℔ lb. $90
Iron—Nitrate, 40°, ℔ lb. .01@.01½
47°, ℔ lb. .02@.02½
Kaolin—*See China Clay.*
Kieserite—℔ ton $9@$10
Lead—Red, American, ℔ lb. .04¼@.05
White, American, in oil, ℔ lb. .05½@.06¼
White, English, ℔ lb., in oil .06¼@.07½
Acetate, or sugar of, white .06@.08
Nitrate .05¾@.06½
Lime Acetate—Am. Brown .90@.95
" Gray .$1.50@$1.60
Litharge—Powdered, ℔ lb. .04¼@.05½
English flake, ℔ lb. .07½@.09¼
Magnesite—Crude, ℔ ton of 1,015 kilos $7@$10
Calcined, ℔ ton of 2,240 lbs. $12@$14
Brick, ℔ ton of 2,240 lbs. $47.50
Manganese—Ore, per unit. 23@.28
Oxide, ground, ℔ lb. .02½@.06¼
Mercuric Chloride—(*Corrosive Sublimate*) ℔ lb. .55@.60
Marble Dust—℔ bbl. .85c.@$1
Metallic Paint—Brown ℔ ton $20@$25
Red $20@$25
Mica—In sheets according to size, 1st quality, ℔ lb. $3.25@$6
Mineral Wool—Ordinary slag .01¼
Ordinary rock .02¼
Nitre Cake—℔ ton $2.50@$3
Ochre—Rochelle, ℔ lb. .01@.01½
Washed Nat Oxf'rd, Lump, ℔ lb. .06¼@.06½
Washed Nat Oxf'rd, Pow., ℔ lb. .06¾@.07¼
Golden, ℔ lb. .03@.06
Domestic, ℔ ton .$8@$10
Oils, Mineral—
Cylinder, light filtered, ℔ gal. .12@.20
Dark filtered, ℔ gal. .10@.15
Extra cold test, ℔ gal. .20@.24
Dark steam refined, ℔ gal. .07½@.12
Phosphorus—℔ lb. .50@.55
Precip., red, ℔ lb. .75@.80
white, ℔ lb. .80@.85
Platinic Chloride—Dry, ℔ oz. $6
Plumbago—Ceylon, ℔ lb. .04@.05
American or German, ℔ lb. .02@.02½
Potassium—Cyanide, ℔ lb., C. P. 98% .52
℔ lb. .40
mining .20@.22
Bromide, domestic, ℔ lb. .28@.32
Chlorate, English, ℔ lb. .10@.12
Chlorate, powdered, English, ℔ lb. .12@.14
Carbonate, ℔ lb., by casks, 98-99% .06@.07
Caustic, ℔ lbs., pure stick .04½@.06
Iodide, ℔ lb. $2.58@$2.80
Nitrate, refined, ℔ lb. .05@.06
Bichromate, ℔ lb. .09@.11
Yellow Prussiate, ℔ lb., 24c. contr., 25c. single casks. .39@.45
Red Prussiate, ℔ lb. .39@.45
Pumice Stone—Select lumps, lb .03½@.15
Original cks., ℔ lb. .01½@.02
Powdered, pure, ℔ lb. .01½@.02
Pyrites—Non-cupreous, p. unit. 10@.11
Quartz—Ground, ℔ ton $6.00@$10.00
Rotten Stone, Powdered, ℔ lb. .03¼@.03¾
Lump, ℔ lb. .06@.07
Original cks, ℔ lb. .04¼@.05¼
Rubbing stone, ℔ lb. .03½@.04
Salt—Liverpool, ground, ℔ sack .70
Domestic, fine, ℔ ton $7@$7.50
Common, fine, ℔ ton $4.50@$5
Turk's Island, ℔ bush .26@.28
Salt Cake—℔ ton $9@$15
Saltpeter—Crude, ℔ lb. .04@.05
Soapstone—Ground, ℔ ton $6@$8
Block and slab according to size.
Sodium—Prussiate, ℔ lb. .22@.24
Phosphate, ℔ lb. .04@.05
Stannate, ℔ lb. .06@.12
Tungstate, ℔ lb. .30@.35
Hyposulphite, ℔ cwt., in casks $1.70@$1.90
Strontium—Nitrate, ℔ lb. .08@.09
Sulphur—Roll, ℔ lb. .01½@.02
Flour, ℔ lb. .01¼@.01¾
Sylvinit, 27@35%, per unit .36½@.37½
Talc—Ground French, ℔ lb. .01¼@.01½
American No. 1, ℔ lb. .01@.01½
American No. 2 .006@.008
Terra Alba—French, ℔ cwt. .50@.80
English .70@.80
Domestic, ℔ ton $8.50@$10
Tin—Crystals, in kegs or bbls. .14@.15
feathered or flossed. .30
Muriate, single .07@.12
Double or strong, 54° B. .10@.11
Oxymur, or nitro .1½
Vermilion—Imp. English, ℔ lb. .64@.66
Am. quicksilver, bulk .59@.62
Am. quicksilver, bags .60@.64
Chinese .85@$1.00
Trieste .90@.95
American .11½@.12
Zinc White—Am., Dry, ℔ lb. .03¼@.04½
Antwerp, Red Seal, ℔ lb. .05½@.05¾
Paris, Red Seal, ℔ lb. .06¼@.07
Muriate solution .06
Sulphate crystals in bbls., ℔ lb. .03@.03

THE RARER METALS.

The prices given below are the prices in New York, based on those of the German makers, and are per gram except where otherwise stated:

Arsenic (metallic), per kilo $0.25
Barium (ex amalgam) 4.00
Boron (cryst.) 4.25
Cadmium (metallic), " 2.75
Calcium (per electrol.) 10.00
Cerium (pulv.) 4.00
Chromium (fus.) .50
" (cryst.) .60
Cobalt (metallic) .35
Columbium 6.00
Didymium (pulv.) 10.00
Erbium-Yttrium (oxydat.) 10.00
Gallium (cryst.) 21.00
Germanium (fus.) 75.00
Glucinum (pulv.) 12.00
" (cryst) 21.00
Indium 9.00
Iridium (fusum) 2.00
" (grains) .50
Lanthanum (pulv.) 12.00
Lithium (in glob.) 8.00
Manganese fusum .50
Molybdenum (pulv.) .25
Niobium (pulv.) 6.00
Osmium 2.00
Palladium (wire) 1.50
Potassium (metal), per kilo 27.50
Rhodium 3.25
Ruthenium 5.00
Rubidium 10.00
Selenium (cryst.) .10
Silicon (metal) .00
Strontium (per electrol.) 14.50
Tantalum 9.50
Tellurium (fusum) .50
Thallium .15
Titanium 1.00
Uranium 2.00
Vanadium 7.00
Wolframium (powder), ℔ 10 gr. .04
Zirconium .1

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par val	Assessments. Total Levied	Assessments. Date and amount of last.			Dividends. Total paid.	Dividends. Date & amount of last.		
1	Adams, s. L.	Colo..	$1,500,000	150,000	$10	*	.....	.....	.....	$687,500	Jan..	1892	05
2	Alaska-Treadwell, g.	Alaska	5,000,000	200,000	25	.....	.....	.....	.....	2,224,000	Apr..	1895	.37½
	Alice, s.	Mont.	10,000,000	400,000	25	*	.....	.....	.....	975,000	Nov..	1891	.06¼
4	Amador, c.	Cal.	1,250,000	250,000	5	*	.....	.....	.....	31,250	Aug..	1890	.12½
5	American, G	Colo..	3,000,000	300,000	10	*	.....	.....	.....	225,000	Mar..	1892	.05
6	American Belle, s. & c	Colo.	2,000,000	400,000	5	*	.....	.....	.....	50,000	Apr..	1891	.12½
7	Americ'n & Nettie, g. s	Colo..	.....	300,000	1	.....	.....	.....	.....	175,000	Mar..	1892	.05
8	Atlantic, c.	Mich.	1,000,000	40,000	25	280,000	April	1875	$1.00	700,000	Feb..	1891	1.00
9	Argyle, G.	Colo..	1,000,000	1,000,000	1	*	.....	.....	.....	20,000	Mar.	1892	.01
10	Aspen Mg. & S., s. L.	Colo..	2,000,000	200,000	10	*	.....	.....	.....	900,000	July.	1894	.10
11	Aurora, L.	Mich..	2,500,000	100,000	25	.....	.....	.....	.....	650,000	Feb..	1893	2.00
12	Badger, g	Ont..	250,000	50,000	5	.....	.....	.....	.....	87,500	Mar.	1890	.25
13	Bald Butte	Mont.	250,000	250,000	1	*	.....	.....	.....	382,000	Jan.	1895	.05
14	Bangkok-C. Bell, c. s. L.	Colo..	600,000	600,000	1	.....	.....	.....	.....	92,510	Aug..	1895	.00½
15	Bates Hunter, s. g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	67,500	Dec..	1891	.009
16	Belden, F. E., m.	N. H.	500,000	100,000	5	*	.....	.....	.....	155,113	Aug..	1895	.04
17	Belle Isle, s.	Nev..	10,000,000	100,000	100	230,271	Sept	1893	.10	300,000	Dec..	1879	.25
18	Belcher, s. G.	Nev..	10,400,000	104,000	100	3,262,900	Nov.	1893	.20	15,397,200	Apr..	1876	1.00
19	Bellevue, Idaho, s. L.	Idaho	1,250,000	125,000	10	120,000	Dec..	1889	.25	200,000	Jan..	1890	.10
20	Best Friend	Colo.	1,000,000	1,000,000	1	.....	.....	.....	.....	90,000	Feb..	1892	.01
21	Bi-Metallic, s. G.	Mont.	5,000,000	200,000	25	.....	.....	.....	.....	1,630,000	June	1893	.10
22	Bodie Con., G. L.	Cal..	10,000,000	100,000	100	714,990	July	1893	.15	1,677,572	Dec..	1894	.25
23	Boston & Mont., G.	Mont.	9,500,000	250,000	10	*	.....	.....	.....	520,000	June	1895	.15
24	Boston & Mont., C. S.	Mont.	3,750,000	150,000	25	*	.....	.....	.....	2,475,000	May..	1895	2.00
25	Brotherton, L.	Mich.	4,000,000	80,000	25	*	.....	.....	.....	120,000	Mar..	1895	.50
26	Bulwer, G.	Cal..	10,000,000	100,000	10	155,000	July	1893	.15	190,000	Oct..	1892	.05½
27	Bunker Hill & S. s. L.	Idaho	9,000,000	300,000	10	*	.....	.....	.....	150,000	Oct..	1888	.06
28	Caledonia, G.	Dak..	10,000,000	100,000	100	595,000	May.	1885	.15	192,000	Oct..	1890	.06½
29	Calumet & Hecla C.,	Mich..	4,500,000	100,000	25	1,200,000	.....	.....	.....	43,350,000	Aug..	1895	5.00
30	Centen'l-Eureka, s. L.	Utah.	1,500,000	30,000	50	30,000	Mar.	1888	1.00	1,200,000	Aug..	1895	.50
31	Central, C.	Mich..	500,000	20,000	25	100,000	Oct..	1861	.65	1,920,000	Feb..	1891	1.00
32	Champion, G	Cali..	340,000	34,000	10	150,000	.....	.....	.....	216,000	Aug..	1895	.10
33	Chrysolite, s. L.	Colo..	10,000,000	200,000	50	*	.....	.....	.....	1,650,000	Dec..	1884	.25
34	Cœur D'Alene, s. L.	Idaho	5,000,000	500,000	10	*	.....	.....	.....	340,000	June	1893	.06
35	Colorado Central, s. L.	Colo..	2,700,000	275,000	10	*	.....	.....	.....	502,661	Apr..	1893	.05
36	Commonwealth, s.	Nev..	10,000,000	100,000	100	200,000	Nov.	1893	.10	20,000	Nov..	1890	.20
37	Confidence, s. L.	Nev..	2,496,000	24,960	100	1,589,550	Aug.	1892	.50	277,680	Apr..	1889	1.00
38	Con. Cal. & Va., s. G	Nev..	21,600,000	216,000	100	216,000	Dec..	1892	.50	3,952,800	Mar	1895	.25
39	Contention, s.	Ariz..	12,500,000	250,000	50	.....	.....	.....	.....	2,637,500	Aug..	1892	.20
40	Cook's Peak, s.	N. M.	2,000,000	200,000	10	.....	.....	.....	.....	119,532	Nov	1892	.05
41	Cop. Queen Con., c.	Ariz..	2,000,000	200,000	10	.....	.....	.....	.....	1,910,000	June.	1895	.25
42	Coptis	Nev..	10,000,000	100,000	100	.....	.....	.....	.....	68,000	Feb..	1895	.01
43	Cortes, s.	Nev.	1,500,000	300,000	5	.....	.....	.....	.....	735,000	Feb..	1893	.15
44	Crescent, s. v., G.	Utah.	15,000,000	600,000	25	60,000	Oct.	1892	.10	238,000	Oct..	1888	.03
45	Crown Point, G. s.	Nev..	10,000,000	100,000	100	2,750,000	June	1893	.25	11,898,000	Jan..	1875	.00
46	Daly, s. L.	Utah.	3,000,000	150,000	20	*	.....	.....	.....	2,850,000	May..	1893	.25
47	†Deadwood-Terra, G.	Dak..	5,000,000	200,000	25	*	.....	.....	.....	1,140,000	Sept..	1892	.05
48	DeLamar, G. s.	Idaho	2,000,000	400,000	5	.....	.....	.....	.....	1,716,000	Aug..	1895	.36
49	Derbec B. Grav., G.	Cal...	10,000,000	100,000	100	100,000	Sept.	1892	.10	260,000	Mar	1891	.05
50	Dexter, G. s.	Nev..	1,000,000	100,000	10	*	.....	.....	.....	245,000	July	1893	.25
51	Elkhorn, s.	Mont.	1,000,000	200,000	5	*	.....	.....	.....	1,324,689	May	1895	.12½
52	Elkton	Colo..	5,000,000	500,000	1	.....	.....	.....	.....	60,000	Dec.	1894	.01
53	Enterprise, s.	Colo..	2,500,000	500,000	5	*	.....	.....	.....	850,000	June.	1893	.25
54	Eureka Con., s. L. G.	Nev ..	1,000,000	50,000	20	550,000	June	1889	.50	5,112,500	Jan.	1892	.25
55	Eureka Hill, G. s. L.	Utah.	1,000,000	10,000	10	*	.....	.....	.....	1,500,000	Jan.	1891	.04
56	Evening Star, s. L.	Colo..	500,000	50,000	10	.....	.....	.....	.....	1,437,500	Dec.	1889	.25
57	Father de Smet, G.	Dak..	10,000,000	100,000	100	200,000	Nov.	1878	1.00	1,125,000	Dec..	1885	.20
58	Franklin, C.	Mich..	1,000,000	40,000	25	320,000	June	1867	2.50	1,240,000	Jan..	1894	2.00
59	Glengarry	Mont.	1,000,000	100,000	10	.....	.....	.....	.....	10,000	June.	1891	.10
60	Gold & Globe, G.	Colo..	750,000	750,000	1	.....	.....	.....	.....	9,375	Mar.	1895	.00¼
61	Gould & Curry, s. G.	Nev...	10,800,000	108,000	100	4,688,400	Oct .	1893	.10	3,826,800	Oct..	1870	10.00
62	Grand Prize, s.	Nev...	10,000,000	100,000	100	785,000	Jan..	1890	.30	495,000	Mar.	1884	.25
63	Granite Mountain, s.	Mont.	10,000,000	400,000	25	.....	.....	.....	.....	12,120,000	July.	1892	.20
64	Great Western, L. Q.	Cal...	5,000,000	50,000	100	50,526	.....	1889	.15	988,366	Nov	1893	.25
65	Hale & Norcross, G. s.	Nev...	11,200,000	112,000	100	5,646,800	June	1893	.50	1,822,000	Aug	1888	.50
66	Hecla Con., s. G. L. C.	Mont.	1,500,000	30,000	50	.....	.....	.....	.....	2,115,000	Aug..	1895	.50
67	Hel'a Mg. & Red, s. L. G.	Mont.	3,315,000	663,000	5	*	.....	.....	.....	197,970	July.	1886	.06
68	Helena & Frisco, s. L.	Idaho	2,500,000	500,000	5	.....	.....	.....	.....	280,000	Feb..	892	.02
69	Helena & Victor	Mont.	1,000,000	200,000	5	.....	.....	.....	.....	80,000	May	1892	.05
70	¶Holmes, s.	Nev...	10,000,000	100,000	100	345,000	Mar.	1892	.25	75,000	Apr.	1892	.25
71	Homestake, G.	Dak..	12,500,000	125,000	100	200,000	July.	1878	1.00	5,556,250	July..	1895	.25
72	Hope, s.	Mont.	1,000,000	100,000	10	*	.....	.....	.....	552,250	Jan	1895	.10
73	Horn-Silver, s. L.	Utah.	10,000,000	400,000	25	*	.....	.....	.....	5,147,500	June.	1895	.12½
74	Idaho, G.	Cal..	310,000	3,100	100	.....	.....	.....	.....	5,489,000	Sept.	1893	2.50
75	Illinois, s.	N. M..	100,000	100,000	1	*	.....	.....	.....	45,000	Apr..	1889	.20
76	Iron Mountain, s.	Mont.	5,000,000	500,000	10	*	.....	.....	.....	385,000	Aug..	1895	.02
77	Iron-Silver, s. L.	Colo..	10,000,000	500,000	20	*	.....	.....	.....	2,500,000	Apr..	1889	.20
78	Jackson, G. s.	Nev..	5,000,000	50,000	100	247,500	Mar..	1893	.20	83,000	Feb	1895	.04
79	Kearsarge, C.	Mich..	1,000,000	40,000	25	190,000	Oct..	1887	1.00	80,000	Jan..	1890	2.00
80	Kennedy	Cal...	10,000,000	100,000	100	.....	.....	.....	.....	2,734,000	Aug..	1895	.48
81	Leadville Con., s. L.	Colo..	4,000,000	400,000	10	*	.....	.....	.....	640,000	Dec..	1892	.03
82	Lexington, G. s.	Mont.	4,000,000	40,000	100	*	.....	.....	.....	652,000	July.	1893	.90
83	Little Chief, s. L.	Colo..	10,000,000	200,000	50	.....	.....	.....	.....	820,000	Dec..	1890	.05
84	Maid of Erin	Colo..	3,000,000	600,000	5	.....	.....	.....	.....	708,500	Apr..	1893	.25
85	Mammoth, s. L. C.	Utah.	3,000,000	400,000	250	110,000	.....	1882	.25	1,040,000	Dec..	1891	.10
86	Maxfield	Cal...	1,200,000	60,000	20	.....	.....	.....	.....	117,000	Apr..	1892	.08
87	Mayflower, D. gravel	Mex..	1,000,000	100,000	10	.....	.....	.....	.....	242,000	Aug.	1895	.10
88	Minas Prietas, G. s.	Mich..	1,000,000	40,000	25	420,000	April	1886	1.00	300,000	Dec..	1890	.50
89	Minnesota, C.	Minn.	26,500,000	165,000	100	.....	.....	.....	.....	1,820,000	Mar..	1876	
90	Minnesota Iron, L.	Colo..	5,000,000	1,000,000	5	19,500	Jan..	1891	.01	2,745,000	Apr..	1893	1.50
91	Mollie Gibson, s.	S. Dak	2,500,000	250,000	10	.....	.....	.....	.....	4,080,000	Jan..	1895	.05
92	Monitor, G.	Cal...	5,000,000	50,000	100	797,500	Feb..	1893	.25	45,000	Oct..	1890	.03
93	Mono, G.	Mont.	3,300,000	660,000	5	*	.....	.....	.....	12,500	Mar	1886	.25
94	Montana, Lt., G. s.	Colo..	600,000	600,000	1	.....	.....	.....	.....	2,701,775	Jan.	1895	.12½
95	Moose	Colo..	1,000,000	100,000	10	.....	.....	.....	.....	72,000	Nov..	1894	.02
96	Morning Star, s. L.	Cal...	240,000	2,400	100	.....	.....	.....	.....	1,025,000	Dec	1891	.25
97	Morning Star Drift, G	Mont.	2,000,000	400,000	5	*	.....	.....	.....	427,100	Aug.	1895	7.00
98	Moulton, s. G.	Nev..	5,000,000	50,000	100	137,500	June	1880	2.00	460,000	July.	1894	.05
99	Mt. Diablo, s.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	225,000	Nov	1893	.30
100	Mt. Rosa, G	Cal...	700,000	100,000	7	.....	.....	.....	.....	10,000	Jan..	1895	.10
101	Napa, Q.	Nev..	10,000,000	100,000	100	538,714	Sept.	1893	.10	720,000	June.	1895	.20
102	Navajo, G. s.	Colo..	550,000	110,000	5	.....	.....	.....	.....	226,111	Apr..	1889	.10
103	New Guston, s.	Cal...	1,000,000	100,000	10	.....	.....	.....	.....	1,877,500	Apr..	1892	.75
104	North Banner Con.	Nev..	10,000,000	100,000	10	90,000	Jan..	1893	.10	20,000	July..	1891	.05
105	North Commonw'th	N. C.	300,000	120,000	2½	.....	.....	.....	.....	25,000	June	1891	.25
106	N. Hoover Hill, G. s.	Nev..	10,000,000	100,000	100	513,075	April	1893	.10	30,000	Dec	1885	.06½
107	North Belle Isle, s.	Cal...	1,000,000	100,000	10	20,000	.....	1885	.02	230,000	May	1893	.50
108	North Star, G.		1,000,000	1,000,000	1	*	.....	.....	.....	450,000	June	1893	.50
109	Nugget, G.		2,400,000	24,000	100	.....	.....	.....	.....	10,000	Jan..	1895	.00½
110	Omaha Cons., G.	Cal...	15,000,000	150,000	100	.....	.....	.....	.....	97,200	July..	1894	.15
111	Ontario, s. L.	Utah	10,000,000	100,000	100	4,391,040	July	1893	.25	13,175,000	Oct..	1892	.50
112	Ophir, G. s.	Nev..	10,000,000	100,000	100	.....	.....	.....	.....	1,595,800	Jan	1880	1.00
113	Osceola, C.	Mich..	1,250,000	50,000	25	480,000	April	1876	1.60	1,947,500	June	1895	1.00
114	Pacific Coast, s.	Cal...	2,000,000	20,000	100	.....	.....	.....	.....	422,500	July.	1893	1.00
115	Parrot, C.	Mont.	2,350,000	235,000	10	.....	.....	.....	.....	1,269,000	June	1893	.10
116	Pet-o	Utah.	10,000,000	40,025	100	.....	.....	.....	.....	17,500	July..	1891	.75
117	Pharmacist, G.	Cal...	1,200,000	1,200,000	1	.....	.....	.....	.....	8,000	June.	1893	.01
118	Plumas Eureka, G.	Colo.	1,406,250	140,600	50	.....	.....	.....	.....	2,636,295	Oct..	1895	.18
119	Plymouth Con., G.	Cal...	5,000,000	100,000	50	*	.....	.....	.....	2,280,000	Feb.	1895	.40
120	Poorman, G. s.	Idaho	375,000	300,000	125	*	.....	.....	.....	68,260	Sept.	1892	.15
121	Portland, G.	Colo..	3,000,000	3,000,000	1	*	.....	.....	.....	161,000	May..	1891	.01
122	Quicksilver, pref., Q.	Cal...	4,300,000	43,000	100	.....	.....	.....	.....	1,823,911	June	1891	1.25
123	com., Q.	Cal..	5,700,000	57,000	100	.....	.....	.....	.....	643,867	July.	1892	.40
124	Quincy, C.	Mich.	1,250,000	50,000	25	200,000	Dec..	1862	.....	7,691,000	Aug.	1895	4.00
125	Red Cloud	Idaho	1,000,000	200,000	5	.....	.....	.....	.....	153,000	Dec..	1892	.10
126	Retriever, L.	S. Dak	1,250,000	250,000	5	.....	.....	.....	.....	20,000	Aug..	1891	.03
127	Rialto, G.	Colo..	300,000	300,000	1	*	.....	.....	.....	50,250	Apr.	1892	.01½
128	Richmond, s. L.	Nev..	1,350,000	54,000	25	*	.....	.....	.....	4,386,780	Sept.	1893	.25
129	Rico-Aspen	Colo..	5,000,000	1,000,000	5	.....	.....	.....	.....	325,000	Nov..	1894	.02½
130	Ridge, C.	Mich..	1,250,000	50,000	25	219,939	Mar.	1886	50	99,785	Feb..	1886	.50
131	Robinson Con., s. L.	Colo..	10,000,000	200,000	50	*	.....	.....	.....	585,000	Mar.	1886	.05
132	Savage, s.	Nev..	11,200,000	112,000	100	4,966,000	June	1893	.25	4,460,000	June	1869	3.00
133	Sierra Buttes, G.	Cal...	2,225,000	125,500	10	.....	.....	.....	.....	1,559,933	Oct..	1893	.12½
134	Sierra Nevada, s. G.	Nev..	10,000,000	100,000	100	4,521,910	Aug.	1893	.20	102,000	Jan..	1871	1.00
135	Silver Cord, s. L. G.	Utah.	10,000,000	100,000	100	97,479	Aug.	1892	.25	270,000	Apr..	1889	.10
136	Silver King, s.	N. M..	500,000	500,000	1	.....	.....	.....	.....	1,063,000	Aug.	1895	.25
137	Silver Mg. of L. V., s. L.	Colo..	5,000,000	250,000	20	*	.....	.....	.....	800,000	Dec.	1891	4.05
138	Small Hopes Con., s.	Cal...	10,000,000	100,000	100	100,000	June	1890	.50	3,225,000	Oct..	1895	.10
139	Standard, G. s.	Colo..	600,000	60,000	10	.....	.....	.....	.....	3,781,159	June.	1895	.10
140	Swansea, G. s.	Mich..	1,250,000	50,000	25	520,000	April	1885	3.00	39,000	Sept.	1892	.10
141	Tamarack, C.	Colo..	500,000	500,000	1	.....	.....	.....	.....	4,270,000	June.	1894	4.00
142	Trinity River Hydr., G	Colo..	1,250,000	1,250,000	1	.....	.....	.....	.....	37,500	Apr.	1894	.00½
143	Union	Colo..	3,000,000	300,000	10	*	.....	.....	.....	27,740	May..	1895	.01
144	United Verde, C.	Aris..	1,000,000	200,000	5	.....	.....	.....	.....	562,500	Dec	1893	.25
145	Victor, G	Colo..	600,000	60,000	1	.....	.....	.....	.....	385,000	Aug..	1895	.10
146	Victor L. & M. Co., G.	Colo..	2,000,000	200,000	1	.....	.....	.....	.....	6,000	June.	1895	.05
147	Ward Con., s.	Colo..	60,000	30,000	2	22,500	May..	1891	.10	20,000	Dec..	1889	.05
148	W. Y. O. D.	Cal...	1,300,000	260,000	5	.....	.....	.....	.....	106,000	Aug.	1895	.14
149	Yankee Girl, s.	Nev.	12,000,000	120,000	100	.....	July.	1893	.25	520,000	July.	1891	.25
150	Yellow Jacket, G.									2,184,000	Aug..	1871	1.50

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total levied.	Assessments. Date and amt of last.		
1	Ajax, G. s. L.	Utah.	$3,000,000	300,000	$10	$15,000	Mar.	1895	$21
2	Alliance, s. G.	Utah.	100,000	100,000	1	120,000	Feb..	1891	.10
3	Alloues, c.	Mich.	2,000,000	80,000	25	1,424,937	Oct..	1891	.10
4	Alpha Con., G. s.	Nev..	3,000,000	30,000	100	209,000	Sept.	1892	.10
5	Alta, s.	Nev..	10,080,000	100,800	100	3,369,880	Jan.	1892	.05
6	American Flag, s.	Colo..	1,250,000	125,000	1	300,000	June	1887	.....
7	Anchor, s. L. G.	Utah.	3,000,000	150,000	5	560,000	July.	1893	.25
8	Barcelona, G.	Nev.	5,000,000	200,000	5	*	.....	.....	.....
9	Belmont, G.	Cal...	500,000	500,000	100	*	.....	.....	.....
10	Belmont, s.	Nev..	5,000,000	50,000	100	735,000	April	1886	.10
11	Best & Belcher, s. G.	Nev..	10,080,000	100,800	10	2,405,275	Aug..	1892	.25
12	Black Oak, G.	Cal...	3,000,000	300,000	100	*	.....	.....	.....
13	Brownlow, G.	Colo..	250,000	250,000	5	.....	.....	.....	.....
14	Brunswick, G.	Cal...	2,000,000	400,000	2	.....	.....	.....	.....
15	Bullion, s. G.	Nev.	10,000,000	100,000	100	2,890,000	Aug.	1892	.25
16	Butte & Boston, C. s.	Mont.	5,000,000	200,000	10	.....	.....	.....	.....
17	Butte Queen, G.	Cal...	1,000,000	100,000	1	6,000	Jan..	1892	.....
18	Calaveras, G.	Cal...	500,000	500,000	5	.....	.....	.....	.....
19	Calaveras Con., g.	Cal...	800,000	160,000	10	.....	.....	.....	.....
20	California, s.	Cal...	1,000,000	100,000	5	9,000	Mar..	1892	.....
21	California Con. L. G.	Cal...	2,250,000	450,000	5	.....	.....	.....	.....
22	Challenge Con., g. s.	Nev..	5,000,000	50,000	100	.....	.....	.....	.....
23	Chollar, s. G.	Nev ..	11,200,000	112,000	100	2,212,000	May..	1895	.50
24	Colchis, s. G.	N. M..	500,000	150,000	5	.....	.....	.....	.....
25	Colorado, s.	Colo..	1,625,000	325,000	1	.....	.....	.....	.....
26	Comstock, s.	Utah.	1,250,000	250,000	100	.....	.....	.....	.....
27	Comstock Tun.	Nev..	10,000,000	100,000	100	35,000	Mar.	1887	.10
28	Con. Imperial, G. s.	Nev..	5,000,000	50,000	50	2,062,500	Jan..	1892	.25
29	Con. New York, s. G.	Nev..	5,000,000	100,000	100	110,000	Mar..	1892	.10
30	Con. Pacific, G.	Cal...	6,000,000	60,000	10	198,000	June	1890	.10
31	Crescent, s. L.	Colo..	3,000,000	300,000	100	*	.....	.....	.....
32	Crocker, s.	Aris..	10,000,000	100,000	1	165,000	Aug.	1892	.05
33	Crowell, G.	N. C..	500,000	500,000	1	.....	.....	.....	.....
34	Dahlonega, G.	Ga...	250,000	250,000	10	*	.....	.....	.....
35	Decatur, s	Colo..	1,500,000	300,000	.....	.....	.....	.....	.....
36	Denver City s.	Colo..	5,000,000	500,000	11	*	.....	.....	.....
37	Denver Gold, G.	Colo..	300,000	60,000	5	.....	.....	.....	.....
38	Dickens-Custer, s.	Idaho	2,100,000	420,000	5	*	.....	.....	.....
39	Durango, G.	Colo..	500,000	500,000	1	*	.....	.....	.....
40	El Dorado, G.	Cal...	1,000,000	250,000	4	*	.....	.....	.....
41	Emma, s	Utah.	625,000	500,000	125	.....	.....	.....	.....
42	Emmons, s. L.	Colo..	2,000,000	2,000,000	1	.....	.....	.....	.....
43	Empire, s.	Utah.	10,000,000	100,000	100	.....	.....	.....	.....
44	Eureka Tunnel, s. L.	Nev...	10,000,000	100,000	100	*	.....	.....	.....
45	Exchequer, s. G.	Nev...	10,000,000	100,000	100	940,000	Jan..	1892	.25
46	Found Treasure, G. s.	Nev..	10,000,000	100,000	100	180,500	Jan..	1892	.50
47	Gogebic I. Syn., L.	Wis..	5,600,000	200,000	25	.....	.....	.....	.....
48	Gold Cup, s.	Colo..	500,000	500,000	1	*	.....	.....	.....
49	Golden Era, s.	Mont.	1,000,000	200,000	10	*	.....	.....	.....
50	Gold Flat, G.	Cal .	1,000,000	100,000	10	5,000	Mar..	1892	.05
51	Gold Rock, G.	Cal. .	1,000,000	500,000	2	.....	.....	.....	.....
52	Golden FeatherCh., g	Cal...	900,000	180,000	5	.....	.....	.....	.....
53	Goodyear G. s. L.	Mont.	1,000,000	200,000	5	13,000	Feb..	1892	.01
54	Grand Duke, s.	Colo..	800,000	80,000	10	.....	.....	.....	.....
55	Gregory Con., G.	Mont.	3,000,000	300,000	10	.....	.....	.....	.....
56	Harlem M. & M. Co., G.	Cal...	1,000,000	200,000	5	.....	.....	.....	.....
57	Hartery Con., G.	Cal...	1,000,000	100,000	10	22,000	Oct..	1890	.05
58	Hartshorn, g. s. l.	S. Dak	1,250,000	250,000	5	8,750	Sept.	1891	.00¼
59	Head Cent. & Tr., s. G	Aris..	10,000,000	100,000	100	16,981	Mar..	1892	.03
60	Hector, G.	Cal..	1,500,000	300,000	5	45,000	Jan..	1889	.15
61	Himalaya, g. s. l.	Utah.	1,800,000	80,000	10	12,800	Oct..	1892	.00½
62	Holywood	Cal...	200,000	100,000	2	.....	.....	.....	.....
63	Huron, C.	Mich..	1,000,000	40,000	25	280,000	May..	1887	3.00
64	Idaho, G. s.	Idaho	1,250,000	250,000	5	.....	.....	.....	.....
65	Ingalls, g	Colo..	100,000	20,000	5	.....	.....	.....	.....
66	Ironton, I.	Wis..	1,000,000	40,000	25	.....	.....	.....	.....
67	Iroquois, C.	Mich..	1,250,000	50,000	25	.....	.....	.....	.....
68	Kentuck Con.	Nev..	10,500,000	105,000	00	57,750	July	1892	.10
69	Julia Con., G. s.	Nev...	11,000,000	110,000	100	1,483,000	Jan..	1889	.10
70	Justice, G. s. C.	Colo.	500,000	500,000	1	*	.....	.....	.....
71	Lacrosse, G.	Colo..	1,000,000	100,000	10	*	.....	.....	.....
72	Little Josephine, s.	Colo..	250,000	50,000	5	.....	.....	.....	.....
73	Little Pittsburg, G. s.	Utah.	4,000,000	400,000	10	4,000	Mar..	1892	.....
74	Lone Star Cons., G.	Cal...	500,000